UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 20-F

☐ REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934

or

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 For the fiscal year ended December 31, 2022

or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 For the transition period from to

or

☐ SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 Date of event requiring this shell company report

Commission File Number 001-38332

QIAGEN N.V.
(Exact name of Registrant as specified in its charter)
n/a
(Translation of Registrant's name in English)
The Netherlands
(Jurisdiction of incorporation or organization)
Hulsterweg 82
5912 PL Venlo
The Netherlands
011-31-77-355-6600
(Address of principal executive offices)

Roland Sackers, Tel: 011-31-77-355-6600, Fax: 011-31-77-355-6658

QIAGEN N.V., Hulsterweg 82, 5912 PL Venlo, The Netherlands

(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of class:	Trading Symbol	Name of each exchange on which registered:
Common Shares, par value EUR 0.01 per share	QGEN	New York Stock Exchange

Securities registered or to be registered pursuant to Section 12(g) of the Act:

None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:

None

The number of outstanding Common Shares as of December 31, 2022 was 227,716,433.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. ☒ Yes ☐ No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. ☐ Yes ☒ No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ☒ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). ☒ Yes ☐ No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or an emerging growth company. See definition of "large accelerated filer," "accelerated filer," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Emerging Growth Company ☐

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards* provided pursuant to Section 13(a) of the Exchange Act. ☐

* The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effective of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

- ☒ U.S. GAAP
- ☐ International Financial Reporting Standards as issued by the International Accounting Standards Board
- ☐ Other

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow: ☐ Item 17 ☐ Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). ☐ Yes ☒ No

Unless the context otherwise requires, references herein to "we," "us," "our," the "Company" or to "QIAGEN" are to QIAGEN N.V. and its consolidated subsidiaries. Totals within tables presented in U.S. dollar millions may contain rounding differences.

EXCHANGE RATES

QIAGEN publishes its financial statements in U.S. dollars. In this Annual Report on Form 20-F, references to "dollars" or "$" are to U.S. dollars, references to CHF are to the Swiss franc, and references to "EUR", the "euro" or "€" are to the European Monetary Union euro. Except as otherwise stated herein, all monetary amounts in this Annual Report on Form 20-F have been presented in U.S. dollars.

The exchange rate used for the euro was obtained from the European Central Bank and is based on a regular daily concentration procedure between central banks across Europe and worldwide, which normally takes place at 2:15 P.M. Central European Time. This rate at March 9, 2023, was $1.0554 per €1.

For information regarding the effects of currency fluctuations on our results, see Item 5 "Operating and Financial Review and Prospects."

TRADEMARKS

We have proprietary rights to trademarks, trade names and service marks used in this Annual Report on Form 20-F that are important to our business, many of which are registered under applicable intellectual property laws. Solely for convenience, trademarks, trade names and service marks referred to in this Annual Report on Form 20-F may appear without the "®" or "™" symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent possible under applicable law, our rights or the rights of the applicable licensor to these trademarks, trade names and service marks. We do not intend our use or display of other companies' trademarks, trade names or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other companies. Each trademark, trade name or service mark of any other company appearing in this Annual Report on Form 20-F is the property of its respective holder.

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PART I

Item 1. Identity of Directors, Senior Management and Advisors

Not applicable.

Item 2. Offer Statistics and Expected Timetable

Not applicable.

Item 3. Key Information

QIAGEN N.V. is registered under its commercial and legal name with the trade register (kamer van koophandel) of the Dutch region Limburg Noord under file number 12036979. QIAGEN N.V. is incorporated under Dutch law as a public limited liability company (naamloze vennootschap) and is organized as a holding company.

Risk Factors

Risk Management:
Our risk management approach embodies the key elements of a sound risk management system including (1) active Supervisory Board and senior management involvement; (2) adequate policies and procedures; (3) adequate risk management, monitoring and information systems; and (4) comprehensive internal controls.

QIAGEN is managed by a Managing Board and an independent Supervisory Board appointed by the General Meeting of Shareholders. One of the Managing Board's responsibilities is the oversight of the risk management system. The Managing Board has developed and implemented strategies, controls and mitigation measures to identify current and developing risks as part of this system. These policies and procedures are embodied in our corporate governance, code of ethics and financial reporting controls and procedures. A variety of functional experts evaluate these business risks, attempting to mitigate and manage them on an ongoing basis.

Identified risks are subdivided into three types:

- a base business risk that is specific to us or our industry and threatens our existing business;
- a business growth risk that is specific to us or our industry and threatens our future business growth; and
- an underlying business risk that is not specific to us or our industry, but applies to a larger number of public companies.

All identified risks are evaluated based on their likelihood of occurring and their potential impact (estimated in monetary terms) in disrupting our progress in achieving our business objectives. The overall risk management goal is to identify risks that could significantly threaten our success and to provide management the opportunity to successfully implement mitigation actions on a timely basis. The results of the risk assessment, and any updates, are reported to the Audit Committee of the Supervisory Board on a regular basis. A detailed risk reporting update is provided each quarter to the Audit Committee for specific risks that have been newly identified or have changed since the previous assessment. At least once on an annual basis, the Supervisory Board discusses the corporate

strategy and business risks, as well as the results of an assessment by the Managing Board and the Audit Committee of the structure and operations of the internal risk management and control systems, including any significant changes.

Our corporate governance structure outlines the responsibilities of our Managing Board and Supervisory Board (discussed in more detail in Item 10 of this Annual Report) and the function of the Audit Committee of the Supervisory Board (discussed in more detail in Item 6 of this Annual Report). We maintain internal controls to ensure the integrity of financial reporting, which is described further in Item 15 of this Annual Report. Additionally, we have a Compliance Committee that consists of senior executives from various functional areas who are responsible for ensuring compliance with legal and regulatory requirements, as well as overseeing the communication of corporate policies, including our Code of Ethics as described further in Item 16B of this Annual Report.

Risk Types
Base Business Risk
• Identification and monitoring of competitive business threats • Monitoring complexity of product portfolio • Monitoring dependence on key customers for single product groups • Reviewing dependence on individual production sites or suppliers • Evaluating purchasing initiatives, price controls and changes to reimbursements • Monitoring production risks, including contamination prevention and high-quality product assurance • Ensuring our ability to defend against intellectual property infringements and maintain competitive advantage after expiration
Business Growth Risk
• Managing the development and successful completion of key R&D projects • Managing successful integration of acquisitions to achieve anticipated benefits
Underlying Business Risk
• Evaluating financial risks, including global economic risks and currency rate fluctuations against the U.S. dollar (our reporting currency) • Evaluating and monitoring international hostilities • Monitoring financial reporting risks, including multi-jurisdiction tax compliance • Reviewing possible asset impairment events • Assessing cyber security, compliance and legal risks, including safety in operations and environmental hazard risks, compliance with various regulatory bodies and pending product approvals • Monitoring risks of FCPA (Foreign Corrupt Practices Act) or antitrust concerns arising from a network of subsidiaries and distributors in foreign countries

The risks described below are listed in the order of our current view of their expected significance. Describing the risk factors in order of significance does not imply that a lower-listed risk factor may not have a material adverse impact on our results of operations, liquidity or capital resources.

Our continued growth is dependent on the development and success of new products.

Rapid technological change and frequent new product introductions are typical in the markets we serve. Our success will depend in part on continuous, timely development and introduction of new products that address sometimes rapidly evolving market requirements, such as the pandemic caused by the SARS-CoV-2 virus. We believe successful new product introductions provide a significant competitive advantage because many customers make an investment of time into selecting and learning how to use a new product and are reluctant to switch after these efforts. To the extent that we fail to introduce new and innovative products, or such products suffer significant delays in development or are not accepted by customers, we may lose market share to our competitors that would be difficult or impossible to regain. An inability to successfully develop and introduce new products, for technological or other reasons, could reduce our growth prospects or otherwise have an adverse effect on our business. In the past, we have experienced delays in the development and introduction of new products, including due to delays in regulatory approvals, or decisions to stop development of projects, and we may experience delays or make decisions to stop certain product development in the future.

As a result, we cannot assure you that we will keep pace with the rapid rate of developments in our markets or that our new products will adequately meet the requirements of the marketplace, achieve market acceptance or regulatory approval, or compete successfully with companies offering similar or new technologies. Some of the factors affecting market acceptance of a new product include:

- availability, quality and price relative to existing competitor products;
- the timing of introduction of the new product relative to competitive products;

- perceptions of the new product's utility;
- citation of the new product in published research;
- regulatory trends and approvals; and
- general trends in life sciences research, applied markets and molecular diagnostics.

In the development of new products, we may make significant investments in intellectual property, software solutions and manufacturing capacity. These investments increase our fixed costs, resulting in higher operational costs in the short term that will negatively impact our gross profit and operating income until products potentially reach a minimum level of market acceptance and sales. The expenses or losses associated with unsuccessful product development activities or lack of market acceptance of our new products could materially adversely affect our business, financial condition and results of operations.

Our continued growth depends significantly on the success of new products in the molecular research and testing markets that we serve and our ability to scale manufacturing capacities to meet customer demands. Important product programs in early commercialization stage include the QIAstat-Dx system for one-step, fully integrated molecular analysis of hard-to-diagnose syndromes, the NeuMoDx 96 and 288 systems offering fully integrated PCR clinical testing and the QIAcuity digital PCR system.

The speed and level of adoption of our new automation platforms will affect sales not only of instrumentation but also of consumables kits – identified as sample and assay kits – that are designed to run on the systems in a "razor-razorblade" model. The rollout of new automation platforms are intended to drive the dissemination and increasing sales of consumables for these systems. We are developing or co-developing new kits for these platforms and seeking regulatory approvals for a number of new products. In turn, the availability and regulatory approval of more tests for processing on the QIAstat-Dx, NeuMoDx and QIAcuity systems will influence the value of the instruments to prospective customers. Slower adoption of these systems could significantly affect sales of instruments as well as consumables products designed to run on these platforms.

An inability to manage our growth, manage the expansion of our operations, or successfully integrate acquired businesses could adversely affect our business.

Our business has grown in recent years, with total net sales increasing to $2.14 billion in 2022 from $1.42 billion in 2017. In addition to incremental sales from our global response to the COVID-19 pandemic, we have made a series of acquisitions in recent years, including the acquisitions of Verogen, Inc in January 2023, BLIRT S.A. in 2022 and NeuMoDx Molecular, Inc. in 2020. We intend to identify and acquire other businesses in the future that support our strategy to build on our global leadership position in providing Sample to Insight solutions focused on molecular research and clinical testing. The successful integration of acquired businesses requires a significant effort and expense across all operational areas.

We continue to make investments to expand our existing business operations. These projects increase our fixed costs, resulting in higher operational costs in the short term that will negatively impact our gross profit and operating income until we more fully utilize the additional capacity of these facilities. The expansion of our business and the addition of new personnel may place a strain on our management and operational systems. As we continue to upgrade our operating and financial systems, as well as expand the geographic presence of our operations, we intend to continue to assess the need to reallocate existing resources or hire new employees, as well as increase responsibilities for both existing and new management personnel.

Our future operating results will depend on our ability to continue to implement and improve our research, product development, manufacturing, sales and marketing and customer support programs, enhance our operational and financial control systems, expand, train and manage our employee base, integrate acquired businesses, and effectively address new issues related to our growth as they arise. There can be no assurance that we will be able to manage our recent or any future expansion or acquisitions successfully, and any inability to do so could have a material adverse effect on our results of operations.

Our acquisitions expose us to new risks, and we may not achieve the anticipated benefits of acquisitions of technologies and businesses.

During the past several years, we have acquired and integrated a number of companies, as mentioned earlier, through which we have gained access to new technologies, products and businesses that complement our internally developed product lines. In the future, we expect to acquire additional technologies, products or businesses to expand our operations. Acquisitions potentially expose us to new operating and financial risks, including risks associated with the:

- assimilation of new products, technologies, operations, sites and personnel;
- integration and retention of fundamental personnel and technical expertise;
- application for and achievement of regulatory approvals or other clearances;
- diversion of resources from our existing products, business and technologies;
- generation of sales;
- implementation and maintenance of uniform standards and effective controls and procedures;
- exposure to cyber security risks or compromise of acquired entities;
- maintenance of relationships with employees, customers and suppliers, and integration of new management personnel;
- issuance of initially dilutive equity securities;
- incurrence or assumption of debt and contingent liabilities;
- increased exposure to geopolitical risks;
- amortization or impairment of acquired intangible assets or potential businesses; and
- exposure to liabilities of and claims against acquired entities or personnel, including patent litigation.

Our failure to address the above risks successfully in the future may prevent us from achieving the anticipated benefits from any acquisition in a reasonable time frame, or at all.

Global economic conditions could adversely affect our business, results of operations and financial condition.

Our results of operations could be materially affected by adverse general conditions in the global economy and financial markets. We may experience an adverse impact on our results of operations due to the current geopolitical tensions caused by the Russian invasion of Ukraine, and the resulting impact it has had on global economic growth rates through higher inflation and ongoing supply chain tensions. The governments of the European Union, the United States, Japan and other jurisdictions have imposed sanctions on certain industry sectors and parties in Russia and the regions of Donetsk and Luhansk in Ukraine, as well as enhanced export controls on certain products and industries. QIAGEN decided in 2022 to suspend business operations in Russia and Belarus, with sales in these countries (along with Ukraine) representing less than 1% of total annual sales.

Further, the global economy recovery from the COVID-19 pandemic will depend on many factors, including the recovery of supply chains to be able to better support customer demands, including those served by QIAGEN. In the near term, we anticipate continued exposures to supply chain restrictions. As we did during the COVID-19 pandemic, we have established inventory agreements with the majority of our suppliers to help compensate for this situation. We closely monitor stock levels to maintain adequate supplies. We also have long-term supply contracts in place to secure raw materials and mitigate a majority of the challenges that we have currently identified. The overall increase in energy costs and base materials has also had a significant adverse impact on our costs for raw materials, specifically plastics and packaging as well as for logistics. Long-term supply contracts have helped to limit the risks for shortages in electronic components, but have still resulted in price increases. We expect some level of market constraints to continue in 2023. We strive to maintain inventories at a sufficient level to ensure reasonable customer service levels and to guard against normal volatility in availability. These initiatives help us to avoid shortages and keep pricing competitive for our products. However, there also is a risk of loss of revenue, penalties due to delayed deliveries and currency losses, or other unforeseen costs that could negatively impact our operating profits.

During these challenging economic times, access to financing in the global financial markets has been adversely affected for many businesses in light of the high-inflation environment. The central banks in the U.S., the United Kingdom and the Euro Zone tightened their monetary policies materially in 2022 by raising

interest rates, and are expected to continue doing so in 2023. Combined with the high degree of uncertainty in the global financial markets and the economic conditions generally and as a result of the war in Ukraine, this may impact our future performance. Our customers may face internal financing pressures that adversely impact spending decisions or the ability to purchase our products, or that lead to a delay in collection of receivables and thus negatively impact our cash flow. A severe or prolonged economic downturn could result in a variety of risks to our business that would adversely impact our results of operations, including the reduction or delay in planned improvements to healthcare systems in various countries, the reduction of funding for life sciences research, and intensified efforts by governments and healthcare payors regarding cost-containment efforts.

Our results of operations could also be negatively impacted if the U.S. federal government were to enact automatic spending cuts (sequestration), which have occurred in the past. Such a decision could add uncertainty to the timing and the availability of budget funds for investment decisions by our customers—particularly researchers, universities, government laboratories and private foundations whose funding is dependent upon grants from government agencies, such as the U.S. National Institutes of Health (NIH) and similar bodies.

As is the case for many businesses, we face the following risks in regard to financial markets:

- severely limited access to financing over an extended period of time, which may affect our ability to fund our growth strategy and could result in delays to capital expenditures, acquisitions or research and development projects;
- failures of currently solvent financial institutions, which may cause losses from our short-term cash investments or our hedging transactions due to a counterparty's inability to fulfill its payment obligations;
- inability to refinance existing debt at competitive rates, reasonable terms or sufficient amounts; and
- increased volatility or adverse movements in foreign currency exchange rates.

Our global operations may be affected by actions of governments, global or regional economic or public health developments, weather or transportation delays, epidemics or pandemics, natural disasters or other force majeure events (collectively, unforeseen events) which may negatively impact our suppliers, our customers or us.

Our business involves operations around the world. Our primary manufacturing facilities are located in Germany, the U.S., Spain and China. We have established sales subsidiaries in numerous countries, and our products are sold through independent distributors serving more than 60 countries. Our global footprint exposes us to unforeseen events, such as the COVID-19 pandemic, or other natural events. We have analyzed climate change risk and its potential impact on our largest production and logistics sites, as well as important sites of our key suppliers. No material risks were identified that could potentially impact our business, operations, sales or expenditures. However, our facilities may be harmed by unforeseen events. In the event that we or our customers are affected by a disaster, we may experience delays or reductions in sales or production. We may also face significantly increased costs or be required to identify alternate suppliers and/or rely on third-party manufacturers.

To the extent that our suppliers are impacted by a natural disaster or other disruption, we may experience periods of reduced production. Any unexpected interruptions in our production capabilities may lead to delayed or lost sales and adversely affect our results of operations for a specific period.

In addition, to the extent we temporarily shut down any facility following such an unforeseen event, we may experience disruptions in our ability to manufacture or ship products to customers or otherwise operate our business. Many of our products are manufactured in a single location, and we may experience significantly adverse effects to the extent that these manufacturing operations are disrupted and cannot be replaced elsewhere.

While our global operations give us the ability to ship some products from alternative sites, we may not be able to do so because the facilities of our customers are shut or the local logistics infrastructure is not functioning. As a result, our sales, profitability and cash flows would suffer.

Damage to our property due to unforeseen events, and the resulting disruption of our business, may be covered by insurance. However, this insurance may not be sufficient to cover all of our potential losses, and the insurance coverage may not continue to be available to us on acceptable terms, or at all. In addition, we may incur incremental costs following an unforeseen event, which will reduce profits and adversely affect our results of operations.

Terrorist attacks and international hostilities and instability in any region could adversely affect our business.

Terrorist attacks, the outbreak of war, or the existence of international hostilities could damage the world economy, adversely affect the global supply chain and materially impact the availability of and prices for energy and other raw materials. In February 2022, the government of Russia invaded Ukraine. The ongoing war is so far confined to Ukraine, but any expansion into other countries could materially disrupt our operations in Europe and/or increase our operating costs. In addition, Russia's prior annexation of Crimea, the annexation of various regions of Ukraine and subsequent military interventions have led to sanctions being levied by the European Union, the U.S. and other countries against Russia. Any such disruptions caused by the Russian military actions in Ukraine, or expansion into other countries, could magnify the impact of other risks described in this Annual Report.

We depend on suppliers for materials used to manufacture our products, and if shipments from these suppliers are delayed or interrupted, we may be unable to manufacture our products.

We buy materials to create our products from a number of suppliers and are not dependent on any one supplier or group of suppliers for our business as a whole. However, key components of certain products, including certain instrumentation and chemicals, are available only from a single source. If supplies from these vendors are delayed or interrupted for any reason, we may not be able to obtain these materials in a timely manner or in sufficient quantity or quality to produce certain products, and this could have an adverse impact on our results of operations.

In 2022, the volatility in product availability and pricing drastically increased compared to previous years. We have long-term supply contracts to secure raw materials and mitigate a majority of availability challenges. The overall increase during 2022 in energy costs and base materials had a significant adverse impact on our raw materials, specifically plastics and packaging as well as logistics costs. We expect some level of market constraints to continue in 2023. Supply chain constraints have required, and may continue to require, in certain instances, alternative delivery arrangements and increased costs and could have a material adverse effect on our business and operations.

We rely heavily on air cargo carriers and other overnight logistics services, and shipping delays or interruptions could harm our business.

Our customers typically keep only a modest inventory of our consumables kits on hand, and consequently often require rapid delivery of purchases. Additionally, some of our products require complex supply chains, such as constant cold storage or shipment using dry ice. As a result, we rely heavily on air cargo carriers and logistic suppliers. If these services are suspended or delayed, and other delivery and logistic suppliers cannot provide satisfactory services, customers may be forced to suspend a significant amount of their work. The lack of adequate delivery alternatives would have a serious adverse impact on our customer relations and results of operations.

Changes in tax laws or their application or the termination or reduction of certain government tax incentives, could adversely impact our overall effective tax rate, results of operations or financial flexibility.

Our effective tax rate reflects the benefit of some income being partially exempt from income taxes due to various intercompany operating and financing activities. The benefit also derives from our global operations, where income or loss in some jurisdictions is taxed at rates higher or lower than the statutory rate of 25.8% in the Netherlands. Changes in tax laws or their application with respect to matters such as changes in tax rates, transfer pricing and income allocation, utilization of tax loss carryforwards, intercompany dividends, controlled corporations, and limitations on the deductibility of interest and foreign related-party expenses, and changes to tax credit mechanisms, could increase our effective tax rate and adversely affect our results of operations and limit our ability to repurchase our common shares, par value EUR 0.01 per share (Common Shares) without experiencing adverse tax consequences. The increased tax burden as a result of changes in law may adversely affect our results of operations. Additionally, if our tax positions are challenged by taxing authorities or other governmental bodies, such as the European Commission, we could incur additional tax liabilities, which could have an adverse effect on our results of operations, financial flexibility or cash flow.

We rely on secure communication and information systems and are subject to privacy and data security laws which, in the event of a disruption, breach, violation or failure, could adversely affect our business.

We rely heavily on communications and information systems to conduct our business. In the ordinary course of business, we collect and store sensitive data, including our own intellectual property and other proprietary business information and that of our customers, suppliers and business partners, as well as personally identifiable information (PII) of our customers and employees, in our data centers and on our networks or in the cloud. Our operations rely on the secure processing, storage and transmission of confidential and other information on both our own and cloud-based computer systems and networks. We have made significant investments to ensure our employees are aware of cyber security risks facing our company and how to prevent data breaches. We have modernized our cyber security tools, and are continually updating our cyber security processes, in an attempt to keep pace with evolving cyber security risks. In spite of our efforts, we are unable to completely eliminate these risks and occasionally experience minor cyber security incidents. External phishing emails (occurring outside of our computer services) are a growing threat our customers are facing. These emails could lead to the disclosing of intellectual property or personally identifiable information, which could lead to financial harm or reputational damage. While our cyber security team works diligently with our employees around the world, as well as with our customers, to mitigate these threats by helping to identify and analyze phishing emails, we cannot guarantee that sensitive data will not be lost or stolen.

A breach in cyber security due to unauthorized access to our computer systems or misuse could include the misappropriation of assets or sensitive information, the corruption of data or other operational disruption. Failures in our computer systems and networks could be caused by internal or external events, such as incursions by intruders or hackers, computer viruses, failures in hardware or software, or cyber terrorists. Furthermore, there is an increased risk of cyber security attacks by state actors due to the Russian invasion of Ukraine. Russian ransomware gangs have threatened to increase hacking activity against critical infrastructure of any nation or organization that retaliates against Russia. Any such increase in such attacks on our third-party providers or other systems could adversely affect our network systems or other operations. If we experience a breach or failure of our systems, we could experience potentially significant operational delays due to the disruption of systems, loss due to theft or misappropriation of assets or data, or negative impacts from the loss of confidential data or intellectual property. We may face significant liability in the event personal information that we maintain is lost or otherwise subject to misuse or other wrongful use, access or disclosure. Further, we could experience significant negative publicity that could result in reputation or brand damage with customers or partners.

Additionally, we are subject to privacy and data security laws across multiple jurisdictions. These include laws relating to the storage of health information that are complex, overlapping, sometimes contradictory and rapidly evolving. In the U.S., individual states regulate requirements and have authority over privacy and personal data protection. For example, the California Consumer Privacy Act of 2018 (CCPA), which took effect on January 1, 2020, imposes expansive new requirements and protections upon the processing of personal data, aimed at giving California consumers more visibility into and control over their personal information. The U.S. states of Virginia and Colorado also enacted comprehensive data privacy laws similar to the CCPA, both of which became effective in 2023. In addition, laws in all 50 U.S. states require businesses to provide notice to consumers whose personal information has been disclosed as a result of a data breach. State laws are changing rapidly and there is discussion in the U.S. Congress of a new comprehensive federal data privacy law to which we would become subject if it is enacted. There are also European privacy laws, such as the General Data Protection Regulation (GDPR) of the European Union, that impose restrictions on the transfer, access, use and disclosure of health and other personal information. As our activities continue to evolve and expand, we may be subject to additional laws that impose further restrictions on the transfer, access, use and disclosure of health and other personal information, which may impact our business either directly or indirectly. A failure to comply with applicable privacy or security laws or significant changes in these laws could subject us to costly regulatory action or lawsuits and could adversely impact our reputation, business and future business plans.

We may encounter delays in receipt, or limits in the amount, of reimbursement approvals and public health funding, which may negatively impact our ability to grow revenues in the healthcare market or our profitability.

Changes in the market availability or reimbursement of our diagnostic testing products by insurance providers and health maintenance organizations could have a significant adverse impact on our results of operations. Third-party payors are often reluctant to reimburse healthcare providers for the use of medical tests that involve new technologies or provide novel diagnostic information. In addition, third-party payors are increasingly limiting reimbursement coverage for medical diagnostic products and, in many instances, are even exerting pressure on suppliers to reduce their prices. Since each third-party payor often makes reimbursement decisions on an individual patient basis, obtaining such approvals is a time-consuming and costly process that requires us to provide scientific

and clinical data supporting the clinical benefits of each of our products. As a result, there can be no assurance that reimbursement approvals will be obtained, and the process can delay the broad market introduction of new products. If third-party reimbursement is not consistent or financially adequate to cover the cost of our products, this could limit our ability to sell our products or cause us to reduce prices, which would adversely affect our results of operations.

Further, the ability of many of our customers to successfully market their products depends in part on the extent to which reimbursement for the costs of these products is available from governmental health administrations, private health insurers and other organizations. Governmental and other third-party payors are increasingly seeking to contain healthcare costs and to reduce the price of medical products and services. With evolving political realities in the United States, certain sections of the Patient Protection and Affordable Care Act of 2010 (ACA) have not been fully implemented and the direction of healthcare policy is unpredictable. Uncertainty around the future of the ACA, and in particular the impact to reimbursement levels, may lead to uncertainty or delay in the purchasing decisions of our customers, which may in turn negatively impact our product sales. In accordance with the Protecting Access to Medicare Act of 2014 (PAMA), the Centers for Medicare & Medicaid Services calculate Medicare reimbursement rates for certain clinical diagnostic tests using weighted median private payor rates, which are based on rate information reported by applicable laboratories. This new rate methodology means the lower reimbursement rates previously experienced in the field of molecular pathology testing now extend to additional diagnostic testing codes on the Clinical Laboratory Fee Schedule (CLFS). If there are not adequate reimbursement levels, our business and results of operations could be adversely affected.

Reduction in research and development budgets and government funding may result in reduced sales.

Our customers include researchers at pharmaceutical and biotechnology companies, academic institutions, and government and private laboratories. Fluctuations in the research and development budgets of these organizations could have a significant adverse effect on demand for our products. Research and development budgets are affected by changes in available resources, the mergers of pharmaceutical and biotechnology companies, changes in spending priorities and institutional budgetary policies. Our results of operations could be adversely affected by any significant decrease in expenditures for life sciences research and development by pharmaceutical and biotechnology companies, academic institutions, and government and private laboratories. In addition, short-term changes in administrative, regulatory or purchasing-related procedures can create uncertainties or other impediments that can have an adverse impact on our results of operations.

In recent years, the pharmaceutical and biotechnology industries have undergone substantial restructuring and consolidation. Additional mergers or consolidation within the pharmaceutical and biotechnology industries could cause us to lose existing customers and potential future customers, which could have a material adverse impact on our results of operations.

We sell our products to universities, government laboratories and private foundations, whose funding is dependent on grants from government agencies, such as the NIH (National Institutes of Health) in the U.S. which accounts for the majority of Life Science funding in the country. Although the level of research funding has been increasing in recent years, we cannot ensure that this trend will continue given federal and state budget constraints. Government funding of research and development is subject to the political process, which is inherently unpredictable. Future sales may be adversely affected if our customers delay purchases as a result of uncertainties regarding the approval of government budget proposals. Also, government proposals to reduce or eliminate budgetary deficits have sometimes included reduced allocations to the NIH and government agencies in other countries that fund life sciences research and development activities. A reduction in government funding for the NIH or government research agencies in other countries could have a serious adverse impact on our results of operations.

Competition could reduce our sales.

The markets for most of our products are very competitive. Competitors may have significant advantages in financial, operational, sales and marketing resources as well as experience in research and development. These competitors may have developed, or could develop in the future, new technologies that compete with our products or even render our products obsolete. Some competitors may obtain regulatory approval from the U.S. Food and Drug Administration (FDA) or similar non-U.S. authorities. Our competitors' development of alternative products offering superior technology, greater cost-effectiveness and/or receiving regulatory approval could have a material adverse effect on our sales and results of operations.

The growth of our business depends in part on the continued conversion of users from competitive products to our sample and assay technologies and other solutions. Lack of conversion could have a material adverse effect on our sales and results of operations.

It can be difficult for users of our products to switch from their current supplier of a particular product, primarily due to the time and expense required to properly integrate new products into their operations. As a result, if we are unable to be the first to develop and supply new products, our competitive position may suffer, resulting in a material adverse effect on our sales and results of operations.

For our commercial clinical assays, we often compete with solutions developed by our laboratory customers, and driving conversion from such laboratory-developed tests (LDTs) to commercial diagnostics assays can be challenging.

The time and expense needed to obtain regulatory approval and respond to changes in regulatory requirements could adversely affect our ability to commercially distribute our products and generate sales.

We and our customers operate in a highly regulated environment characterized by frequent changes in the governing regulatory framework. Genetic research activities and products commonly referred to as "genetically engineered" (such as certain food and therapeutic products) are subject to extensive governmental regulation in most developed countries, especially in the major markets for pharmaceutical and diagnostic products such as the European Union, the U.S., China and Japan. In recent years, several highly publicized scientific events (notably in genomic research, gene editing and cloning) have prompted intense public debate on the ethical, philosophical and religious implications of an unlimited expansion in genetic research and the use of products emerging from this research. As a result of this debate, some key countries may increase or establish regulatory barriers, which could adversely affect demand for our products and prevent us from fulfilling our growth expectations. Furthermore, there can be no assurance that any future changes in applicable regulations will not require further expenditures or an alteration, suspension or liquidation of our operations in certain areas, or even in their entirety.

Changes in the existing regulations or adoption of new requirements or policies could adversely affect our ability to sell our approved or cleared products, or to seek approvals for new products in other countries around the world. Sales of certain products now in development may be dependent upon us successfully conducting preclinical studies, clinical trials and other tasks required to gain regulatory approvals and meet other requirements from the In Vitro Diagnostic Device Regulation in the European Union, the FDA in the U.S. and regulatory agencies in other countries. If we are not able to meet the applicable requirements, we will not be able to commercialize our products and tests, which will have a material adverse effect on our business.

Several of our key products and programs are medical devices that are subject to extensive regulation by the FDA under the U.S. Food, Drug and Cosmetic Act. We plan to apply for FDA clearance or approval of additional products in the future. Regulatory agencies in other countries also have medical device and in vitro diagnostic medical devices (IVD) approval requirements that are becoming more extensive. These regulations govern most commercial activities associated with medical devices, including indications for the use of these products as well as other aspects that include product development, testing, manufacturing, labeling, storage, record-keeping, advertising and promotion. Compliance with these regulations is expensive and time-consuming.

Our cleared or approved devices, including diagnostic tests and related equipment, are subject to numerous post-approval requirements. We are subject to inspection and marketing surveillance by the FDA to determine our compliance with regulatory requirements. If the FDA determines that we have failed to comply, it can institute a wide variety of enforcement actions, ranging from warning letters to more severe sanctions such as fines, injunctions and civil penalties, recalls or seizures of our products, operating restrictions, partial suspension or total shutdown of production, denial of our requests for 510(k) clearance or pre-market approval of product candidates, withdrawal of 510(k) clearance or pre-market approval already granted and civil or criminal prosecution. Any enforcement action by the FDA may affect our ability to commercially distribute these products in the U.S.

Some of our products are sold for research purposes in the U.S. We do not promote these products for clinical diagnostic use, and they are labeled "For Research Use Only" (RUO) or "For Molecular Biology Applications." If the FDA were to disagree with our designation of a product as having RUO status, we could be forced to stop selling it until appropriate regulatory clearance or approval has been obtained.

We are subject to risks associated with patent litigation.

The biotechnology industry has been characterized by extensive litigation regarding patents and other intellectual property rights, particularly since industry competitors gravitate around common technology platforms. We are aware that patents have been applied for and/or issued to third parties claiming technologies for sample and assay technologies that are closely related to those we use. From time to time, we receive inquiries requesting confirmation that we do not infringe patents of third parties. We endeavor to follow developments in this field, and we do not believe that our technologies or products infringe any proprietary rights of third parties. However, there can be no assurance that third parties will not challenge our activities or, if so challenged, that we will

prevail. In addition, the patent and proprietary rights of others could require that we alter our products or processes, pay licensing fees or cease certain activities, and there can be no assurance that we will be able to license any technologies that we may require on acceptable terms. In addition, litigation, including proceedings that may be declared by the U.S. Patent and Trademark Office or the International Trade Commission, may be necessary to respond to any assertions of infringement, enforce our patent rights and/or determine the scope and validity of our proprietary rights or those of third parties. Litigation, or threatened litigation, could involve substantial cost, and there can be no assurance that we would prevail in any proceedings.

We rely on collaborative commercial relationships to develop and/or market some of our products.

Our long-term business strategy involves entering into strategic alliances as well as marketing and distribution arrangements with academic, corporate and other partners relating to the development, commercialization, marketing and distribution of certain of our existing and potential products. We may be unable to continue to negotiate these collaborative arrangements on acceptable terms, and these relationships also may not be scientifically or commercially successful. In addition, we may be unable to maintain these relationships, and our collaborative partners may pursue or develop competing products or technologies, either on their own or in collaboration with others.

Our Precision Diagnostics business includes projects with pharmaceutical and biotechnology companies to co-develop companion diagnostics paired with drugs that those companies either market currently or are developing for future use. The success of these co-development programs, including regulatory approvals for the companion diagnostics, depends upon the continued commitment of our partners to the development of their drugs, the outcome of clinical trials for the drugs and diagnostics, and regulatory approvals of the tests and drugs. In addition, the future level of sales for companion diagnostics depends to a high degree on the commercial success of the related medicines for which the tests have been designed. More companion diagnostics would be sold in combination with a widely prescribed drug than one with limited use.

The successful marketing of QIAGEN products, in some cases, depends on commercial relationships such as joint ventures or distributorships, particularly in emerging markets where we partner with local companies to augment our less-established commercial relationships and infrastructure. The continued commitment of our partners to these ventures, as well as the management of the commercial efforts, could influence QIAGEN's sales and profitability in these markets.

We have made investments in and are expanding our business into growth markets, which exposes us to risks.

Our top six emerging growth markets are Brazil, China, India, South Korea, Mexico, and Turkey, which together accounted in 2022 for approximately 13% of total sales. Russia was removed as a top growth market in 2022 following the invasion of Ukraine and the subsequent decision to suspend business operations in Russia and Belarus, which made up less than 1% of total sales. We expect to continue to focus on expanding our business in these or other fast-growing markets, including those in the Middle East and Asia. In addition to the currency and operating risks described above, our international operations are subject to a variety of risks arising from the economy, political outlook, language and cultural barriers in countries where we have operations or do business. In many of these emerging markets, we may face several risks that are more significant than in other countries in which we have a history of doing business. These risks include economies that may be dependent on only a few products and are therefore subject to significant fluctuations, weak legal systems that may affect our ability to enforce contractual rights, exchange controls, unstable governments, and privatization or other government actions affecting the flow of goods and currency. In conducting our business, we move products from one country to another and may provide services in one country from a subsidiary located in another country. Accordingly, we are vulnerable to abrupt changes in customs and tax regimes that could have significant negative impacts on our results of operations.

Some of our customers are requiring us to change our sales arrangements to lower their costs, and this may limit our pricing flexibility and harm our business.

Some of our customers have developed purchasing initiatives to reduce the number of vendors from which they purchase products in order to lower their supply costs. In some cases, these customers have established agreements with large distributors, which include discounts and direct involvement in the distributor's purchasing process. These activities may force us to supply large distributors with our products at discounts in order to continue providing products to some customers. For similar reasons, many larger customers, including the U.S. federal government, have requested, and may request in the future, special pricing arrangements, which can include blanket purchase agreements. These agreements may limit our pricing flexibility, which could harm our business and affect

our results of operations. For a limited number of customers, and at the request of customers, we have conducted sales transactions through distribution and other value-added partners. If sales grow through these intermediaries, this could adversely impact our results of operations, in particular our gross profit.

Exchange rate fluctuations may adversely affect our business and operating results.

Given that we currently market our products throughout the world, a significant portion of our business is conducted in currencies other than the U.S. dollar, our reporting currency. As a result, fluctuations in value relative to the U.S. dollar of the currencies in which we conduct our business have caused and will continue to cause foreign currency transaction gains and losses. Foreign currency transaction gains and losses arising from normal business operations are charged against earnings in the period when incurred. Due to the number of currencies involved, the variability of currency exposures and the potential volatility of currency exchange rates, we cannot predict the effects of future exchange rate fluctuations. As of April 1, 2022, the results of operations from our subsidiary in Turkey have been reported under highly inflationary accounting as the prior three-years cumulative inflation rate exceeded 100%. While we may engage in foreign exchange hedging transactions to manage our foreign currency exposure, there can be no assurance that our hedging strategy will adequately protect our operating results from the effects of future exchange rate fluctuations.

Our success depends on the continued employment of qualified personnel, any of whom we may lose at any time.

Although we have not experienced any difficulties attracting or retaining management and scientific staff, our ability to recruit and retain qualified, skilled employees will continue to be critical to our success. Given the intense competition for experienced scientists and managers among pharmaceutical and biotechnology companies, as well as academic and other research institutions, there can be no assurance that we will be able to attract and retain employees critical to our success on acceptable terms. Initiatives to expand QIAGEN will also require additional employees, including management with expertise in areas such as research and development, manufacturing, digitization, sales and marketing, and the development of existing managers to lead a growing organization. The failure to recruit and retain qualified employees, or develop existing employees, could have a material adverse impact on our results of operations.

Our ability to accurately forecast our results during each quarter may be negatively impacted by the fact that at times a high percentage of our sales may be recorded in the final weeks or days of the quarter.

In the markets we serve, a high percentage of purchase orders can be received in the final few weeks or days of each quarter. Although this varies from quarter to quarter, many customers make a large portion of their purchase decisions late in each quarter, in particular because they receive new information during this period on their budgets and requirements. Additionally, volatility in the timing of revenue from companion diagnostic partnerships can be difficult to predict. As a result, even late in each quarter, we cannot predict with certainty whether our sales forecasts for the quarter will be achieved.

Historically, we have been able to rely on the overall pattern of customer purchase orders during prior periods to project with reasonable accuracy our anticipated sales for the current or coming quarters. However, if customer purchasing trends during a quarter vary from historical patterns, as may occur with changes in market and economic conditions, our quarterly financial results could deviate significantly from our projections. As a result, our sales forecasts for any given quarter may prove not to be accurate. We also may not have sufficient, timely information to confirm or revise our sales projections for a specific quarter. If we fail to achieve our forecasted sales for a particular quarter, the value of our Common Shares could be significantly affected.

We have a significant amount of debt that may adversely affect our financial condition and flexibility.

We have a significant amount of debt, debt service obligations and restrictive covenants imposed by our lenders. A high level of indebtedness increases the risk that we may default on our debt obligations, and restrictive covenants may prevent us from borrowing additional funds. There is no assurance that we will be able to generate sufficient cash flow to pay the interest on our debt and comply with our debt covenants, or that future working capital, borrowings or equity financing will be available to repay or refinance our debt. If we are unable to generate sufficient cash flow to pay the interest on our debt and comply with our debt covenants, we may have to delay or curtail our research and development programs. The level of our indebtedness could, among other things:

- make it difficult for us to make required payments on our debt;
- make it difficult in the future for us to obtain financing necessary for working capital, capital expenditures, debt service requirements or other purposes;
- limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we compete; and

- make us more vulnerable in the event of a downturn in our business.

Our business may require substantial additional capital, which we may not be able to obtain on terms acceptable to us, if at all.

Our future capital requirements and level of expenses will depend on numerous factors, including the costs associated with:

- marketing, sales and customer support efforts;
- research and development activities;
- expansion of our facilities;
- consummation of possible future acquisitions of technologies, products or businesses;
- demand for our products and services;
- repayment or refinancing of debt; and
- payments in connection with our hedging activities and/or taxes.

We currently anticipate that our short-term capital requirements will be satisfied by cash flow from our operations and/or cash on hand. As of December 31, 2022, we had outstanding long-term debt of $1.9 billion, of which $389.6 million was current. We may choose to refinance these liabilities.

If at some point in time our existing resources should be insufficient to fund our activities, we may need to raise funds through public or private debt or equity financings. The funds for the refinancing of existing liabilities or for the ongoing funding of our business may not be available or, if available, not on terms acceptable to us. If adequate funds are not available, we may be required to reduce or delay expenditures for research and development, production, marketing, capital expenditures and/or acquisitions, which could have a material adverse effect on our business and results of operations. To the extent that additional capital is raised through the sale of equity or convertible securities, the issuance of any securities could result in dilution to our shareholders.

The accounting for the cash convertible notes we have issued will result in recognition of interest expense significantly greater than the stated interest rate of the notes and may result in volatility to our Consolidated Statements of Income.

We will settle any conversions of the Cash Convertible Notes described under the heading “Other Factors Affecting Liquidity and Capital Resources” elsewhere in this Annual Report, entirely in cash. Accordingly, the conversion option that is part of the Cash Convertible Notes is accounted for as a derivative pursuant to accounting standards relating to derivative instruments and hedging activities. Refer to Note 14 "Derivatives and Hedging" and Note 16 "Debt", of the Notes to Consolidated Financial Statements. In general, this resulted in an initial valuation of the conversion option separate from the debt component of the Cash Convertible Notes, resulting in an original issue discount. The original issue discount will be accreted to interest expense over the term of the Cash Convertible Notes, which will result in an effective interest rate reported in our financial statements significantly in excess of the stated coupon rates of the Cash Convertible Notes. This accounting treatment will reduce our earnings. For each financial statement period after the issuance of the Cash Convertible Notes, a gain (or loss) will be reported in our financial statements to the extent the valuation of the conversion option changes from the previous period. The Call Options issued in connection with the Cash Convertible Notes will also be accounted for as derivative instruments, substantially offsetting the gain (or loss) associated with changes to the valuation of the conversion option. This may result in increased volatility to our results of operations.

The cash convertible note hedge and warrant transactions we entered into in connection with the issuance of our Cash Convertible Notes may not provide the benefits we anticipate, and may have a dilutive effect on our common stock.

Concurrently with the issuance of the Cash Convertible Notes, we entered into Call Options and issued Warrants. We entered into the Call Options with the expectation that they would offset potential cash payments by us in excess of the principal amount of the Cash Convertible Notes upon conversion of the Cash Convertible Notes. In the event that the hedge counterparties fail to deliver potential cash payments to us, as required under the Call Options, we would not

receive the benefit of such transaction. Separately, we also issued Warrants. The Warrants could separately have a dilutive effect to the extent that the market price per share of our common stock, as measured under the terms of the Warrants, exceeds the strike price of the Warrants.

An impairment of goodwill and intangible assets could reduce our earnings.

At December 31, 2022, our consolidated balance sheet reflected $2.4 billion of goodwill and $544.8 million of intangible assets. Goodwill is recorded when the purchase price of a business exceeds the fair value of the tangible and separately measurable intangible net assets. U.S. generally accepted accounting principles (U.S. GAAP) require us to test goodwill for impairment on an annual basis or when events or circumstances occur indicating that goodwill might be impaired. Long-lived assets, such as intangible assets with finite useful lives, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. The impairment review often cannot be done at the level of the individual asset and it must instead be applied to a group of assets. For the purpose of our annual goodwill impairment testing based on the current circumstances of how we manage our business, this group of assets is the Company as a whole. If we determine that any of our goodwill or intangible assets were impaired, we will be required to take an immediate charge to earnings and our results of operations could be adversely affected.

Our strategic equity investments may result in losses.

We have made, and may continue to make, strategic investments in businesses as opportunities arise. We periodically review the carrying value of these investments for impairment, considering factors that include the most recent stock transactions, book values from the most recent financial statements, and forecasts and expectations of the investee. The results of these valuations may fluctuate due to market conditions and other conditions over which we have no control.

Estimating the fair value of non-marketable equity investments in life science companies is inherently subjective. If actual events differ from our assumptions and unfavorable fluctuations in the valuations of the investments are indicated, we could be required to write down the investment. This could result in future charges on our earnings that could materially adversely affect our results of operations. It is uncertain whether or not we will realize any long-term benefits from these strategic investments.

Doing business internationally creates certain risks.

Our business involves operations in several countries around the world. Our consumables manufacturing facilities are located in Germany, China, Spain and the U.S. We source raw materials and subcomponents to manufacture our products from different countries. We have established sales subsidiaries in numerous countries. In addition, our products are sold through independent distributors serving more than 60 countries. Conducting and launching operations on an international scale requires close coordination of activities across multiple jurisdictions and time zones and consumes significant management resources. We have invested heavily in computerized information systems in order to manage more efficiently the widely dispersed components of our operations. If we fail to coordinate and manage these activities effectively, our business and results of operations will be adversely affected.

Our operations are subject to other risks inherent in international business activities, such as the general economic and public health conditions in the countries in which we operate, trade restrictions and changes in tariffs, longer accounts receivable payment cycles in certain countries, overlap of different tax structures, unexpected changes in regulatory requirements, and compliance with a variety of foreign laws and regulations. Other risks associated with international operations include import and export licensing requirements, climate change legislation, exchange controls and changes in freight rates, as may occur as a result of rising energy costs. Further, any misuse or other wrongful use of our products could expose us to negative publicity resulting in reputation or brand damage with customers or partners. As a result of these conditions, an inability to successfully manage our international operations could have a material adverse impact on our business and results of operations.

In any of the markets in which we do business, increasing attention to environmental, social and governance (ESG) matters may result in new or expanded legal or regulatory requirements or expectations specific to ESG matters. A failure to meet investor or other stakeholder expectations, may result in adverse reputation impacts, loss of business or a negative impact to attract and retain talent. Further, working to adhere to any new or expanded legal or regulatory requirements may require additional investments which could negatively impact our profitability.

Unethical behavior and non-compliance with laws by our sales representatives, other employees, consultants, commercial partners or distributors or employees could seriously harm our business.

Our operations include doing business in countries with a history of corruption and involve transactions with foreign governments. These factors may increase the risks associated with our international activities. We are subject to the U.S. Foreign Corrupt Practices Act (FCPA), the U.K. Bribery Act and other laws that prohibit improper payments or offers of payments to foreign governments and their officials and political parties by business entities for the purpose of obtaining or retaining business. We have operations, agreements with third parties and sales in countries known to experience corruption. Further international expansion may involve increased exposure to these types of practices. Our activities in these countries and others create risks of unauthorized payments or offers of payments, non-compliance with laws, or other unethical behavior by any of our employees, consultants, sales agents or distributors, that could be in violation of various laws, including the FCPA, even though these parties are not always subject to our control.

Our policy is to implement safeguards to discourage these or other unethical practices by our employees and distributors including online and in-person employee trainings, periodic internal audits and standard reviews of our distributors. However, our existing safeguards and any future improvements may not prove to be effective, and our employees, consultants, sales agents or distributors may engage in conduct for which we might be held responsible. Violations of the FCPA and other laws may result in criminal or civil sanctions, which could be severe, and we may be subject to other liabilities, which could negatively affect our business, results of operations and financial condition.

Real or perceived defects in or misuse of our products could adversely affect our results of operations, growth prospects and reputation.

We currently market our products in over 130 countries either directly or indirectly through commercial partners and distributors. Due to the size and breadth of our operations, we may not always be able to track the use of our products by the end users. If our products are misused or are perceived to be misused, this could adversely affect our reputation and our customers' willingness to buy from us, and adversely affect market acceptance or perception of our products.

Many of our customers—especially those in law enforcement and government who use our products for forensic testing, human identification, food testing or other purposes—could use our products in applications that are of public interest or critical to their businesses or missions. As a result, they may a lower risk tolerance to defects in our products than to defects in other less critical products. A defect in or misuse of any of our products by our law enforcement customers could lead to interference with the administration of justice, such as damage to forensic evidence. Any defects or misuse, real or perceived, could cause us to lose sales opportunities, increase our service costs, incur replacement costs, cause reputational damage, lose customers or subject us to liability for damages and divert our resources from other tasks. Any one of these factors could materially and adversely affect our business and results of operations. In addition, our products could be perceived as ineffective for reasons outside of our control.

Additionally, if any of our customers, government or otherwise, use or are perceived to use our products in a manner that is unethical, unlawful or inconsistent with our values, this may damage our reputation and results of operations. We strive to ensure that our products are used only in ethical and lawful ways, but we cannot provide any assurance that we will not be subject to claims from third parties alleging that our products were misused. Any allegations of misuse by our customers or third parties may damage our reputation, even if we took no part in the misuse or take immediate action to sever ties with such customers.

We believe that our brand and reputation are critical to driving our business. Building our brand will depend largely on our ability to continue to provide top-tier service, including high quality products at appropriate price points, which we may not do successfully. Negative reviews or publicity about our products or business, especially on media outlets, could harm our reputation and diminish our ability to make additional sales, which would adversely affect our business, financial condition, and results of operations.

We depend on patents and proprietary rights that may fail to protect our business.

Our success depends to a large extent on our ability to develop proprietary products and technologies and to establish and protect our patent and trademark rights in these products and technologies. As of December 31, 2022, we owned 314 issued patents in the United States, 260 issued patents in Germany and 1,776 issued patents in other major industrialized countries. In addition, as of December 31, 2022, we had 370 pending patent applications, and we intend to file applications for additional patents as our products and technologies are developed. The patent positions of technology-based companies involve complex legal and factual questions and may be uncertain, and the laws governing the scope of patent coverage and the periods of enforceability of patent protection are subject to change. In addition, patent applications in the United States are maintained in secrecy until patents issue, and publication of discoveries in the

scientific or patent literature tends to lag behind actual discoveries by several months. Therefore, no assurance can be given that patents will issue from any patent applications that we own or license, or if patents do issue, that the claims allowed will be sufficiently broad to protect our technology. In addition, no assurance can be given that any issued patents that we own or license will not be challenged, invalidated or circumvented, or that the rights granted thereunder will provide us competitive advantages. Further, as issued patents expire, we may lose some competitive advantage as others develop competing products and as a result, we may lose revenue.

Some of our products incorporate patents and technologies that are licensed from third parties and for certain products, these in-licensed patents together with other patents provide us with a competitive advantage. These licenses impose various commercialization, sublicensing and other obligations on us. Our failure to comply with these requirements could result in the conversion of the applicable license from being exclusive to non-exclusive or, in some cases, termination of the license, and as a result, we may lose some competitive advantage and experience a loss of revenue.

We also rely on trade secrets and proprietary know-how, which we seek to protect through confidentiality agreements with our employees and consultants. There can be no assurance that any confidentiality agreements that we have with our employees, consultants, outside scientific collaborators and sponsored researchers and other advisors will provide meaningful protection for our trade secrets or adequate remedies in the event of unauthorized use or disclosure of such information. There also can be no assurance that our trade secrets will not otherwise become known or be independently developed by competitors.

We currently engage in, and may continue to engage in, collaborations with academic researchers and institutions. There can be no assurance that under the terms of such collaborations, third parties will not acquire rights in certain inventions developed during the course of these collaborations.

Our business exposes us to potential product liability.

The marketing and sale of our products and services for certain applications entail a potential risk of product liability. Although we are not currently subject to any material product liability claims, product liability claims may be brought against us in the future. Further, there can be no assurance that our products will not be included in unethical, illegal or inappropriate research or applications, which may in turn put us at risk of litigation. We carry product liability insurance coverage, which is limited in scope and amount. There can be no assurance that we will be able to maintain this insurance at a reasonable cost and on reasonable terms, or that this insurance will be adequate to protect us against any or all potential claims or losses.

We are subject to various laws and regulations generally applicable to businesses in the different jurisdictions in which we operate, including laws and regulations applicable to the handling and disposal of hazardous substances. The risk of accidental contamination or injury from these materials cannot be completely eliminated. In the event of such an accident, we could be held liable for any damages that result, and any such liability could have a material adverse impact on us.

Our operating results may vary significantly from period to period and this may affect the market price of our Common Shares.

Our operating results may vary significantly from quarter to quarter, and also year to year, since they are dependent upon a broad range of factors that include demand for our products, the level and timing of customer research budgets and commercialization efforts, the timing of government funding budgets of our customers, the timing of our research and development activities and related regulatory approvals, the impact of sales and marketing expenses, restructuring activities, introduction of new products by us or our competitors, competitive market conditions, exchange rate fluctuations and general economic conditions. Our expense levels are based in part on our expectations as to future sales trends. As a result, sales and earnings may vary significantly from quarter to quarter or from year to year, and actual sales and earnings results in any one period will not necessarily be indicative of results to be anticipated in subsequent periods. Our results may also fail to meet or exceed the expectations of securities analysts or investors, which could cause a decline in the market price of our Common Shares.

Our holding company structure makes us dependent on the operations of our subsidiaries.

QIAGEN N.V. is incorporated under Dutch law as a public limited liability company (naamloze vennootschap), and is organized as a holding company. Currently, the material assets are the outstanding shares of the QIAGEN subsidiaries, intercompany receivables and other financial assets such as cash, short-term investments and derivative instruments. As a result, QIAGEN N.V. is dependent upon payments, dividends and distributions from the subsidiaries for funds

to pay operating and other expenses as well as to pay future cash dividends or distributions, if any, to holders of our Common Shares. Dividends or distributions by subsidiaries in a currency other than the U.S. dollar may result in a loss upon a subsequent conversion into U.S. dollars.

Our Common Shares may have a volatile public trading price.

The market price of our Common Shares since our initial public offering in September 1996 has increased significantly and been highly volatile. Since January 10, 2018, our shares have been listed on the New York Stock Exchange (NYSE). Before that, our shares were listed on the NASDAQ through January 9, 2018. In the last two years, the price of our Common Shares has ranged from a high of $59.00 to a low of $40.38. On the Frankfurt Stock Exchange our Common Shares have ranged from a high of €51.56 to a low of €37.38 during the last two years.

In addition to overall stock market fluctuations, factors that may have a significant impact on the price of our Common Shares include:

- announcements of technological innovations or the introduction of new products by us or our competitors;
- developments in our relationships with collaborative partners;
- quarterly variations in our operating results or those of our peer companies;
- changes in government regulations, tax laws or patent laws;
- developments in patent or other intellectual property rights;
- developments in government spending budgets for life sciences-related research;
- general market conditions relating to the diagnostics, applied testing, pharmaceutical and biotechnology industries; and
- impact from foreign exchange rates.

The stock market has from time to time experienced extreme price and trading volume fluctuations that have particularly affected the market for technology-based companies. These fluctuations have not necessarily been related to the operating performance of these companies. These broad market fluctuations may adversely affect the market price of our Common Shares.

Holders of our Common Shares should not expect to receive dividend income.

QIAGEN has not paid an annual dividend since its inception, and does not intend to implement one at this time. At the same time, in January 2017 we completed a synthetic share repurchase that combined a direct capital repayment with a reverse stock split. Although we do not anticipate paying any cash dividends on a regular basis, the distribution of any cash dividends through another synthetic share repurchase in a currency other than the U.S. dollar will be subject to the risk of foreign currency transaction losses. Investors should not invest in our Common Shares if they are seeking dividend income; the only return that may be realized through investing in our Common Shares would be through an appreciation in the share price.

Holders of our Common Shares may not benefit from future stock repurchase programs.

QIAGEN has conducted share repurchase programs in the past through open-market transactions. The purpose of our share repurchases has been to hold the shares in treasury in order to satisfy obligations from exchangeable debt instruments, warrants and/or employee share-based remuneration plans, and thus to reduce dilution to existing holders of our Common Shares. In 2019, we began net share withholding on the vesting of stock-based awards and as a result, fewer shares are issued than the number of awards outstanding. We may decide not to continue such programs in the future, our covenants with lenders may limit our ability to use available cash to do so, or the market price of our Common Shares may make such repurchases less desirable. In any of these cases, holders of our Common Shares may suffer dilution from conversion of our indebtedness or issuance of shares pursuant to employee remuneration plans that would otherwise be at least partially offset by repurchased shares.

Future sales and issuances of our Common Shares could adversely affect our stock price.

Any future sale or issuance of a substantial number of our Common Shares in the public market, or any perception that a sale may occur, could adversely affect the market price of our Common Shares. Under Dutch law, a company can issue shares up to its authorized share capital provided for in its Articles of Association. Pursuant to our Articles of Association, our authorized share capital amounts to EUR 9.0 million, which is divided into 410.0 million common shares, 40.0 million financing preference shares and 450.0 million preference shares, with all shares having a EUR 0.01 par value. As of December 31, 2022, a total of approximately 227.7 million Common Shares were outstanding along with approximately 3.8 million additional shares reserved for issuance upon exercise or release of outstanding stock options and awards, of which 9.0 thousand were vested. A total of approximately 11.8 million Common Shares are reserved and available for issuances under our stock plans as of December 31, 2022, including the shares subject to outstanding stock options and awards. The majority of our outstanding Common Shares may be sold without restriction, except shares held by our affiliates, which are subject to certain limitations on resale. Additionally, convertible debt issued in 2020 and Warrants issued in connection with the Cash Convertible Notes cover an aggregate of 26.8 million underlying shares of common stock or up to a maximum of 42.5 million shares, subject to customary adjustments under certain circumstances.

Shareholders who are United States residents could be subject to unfavorable tax treatment.

We may be classified as a "passive foreign investment company," or a PFIC, for U.S. federal income tax purposes if certain tests are met. Our treatment as a PFIC could result in a reduction in the after-tax return to holders of Common Shares and would likely cause a reduction in the value of these shares. If we were determined to be a PFIC for U.S. federal income tax purposes, highly complex rules would apply to our U.S. shareholders. We would be considered a PFIC with respect to a U.S. shareholder if for any taxable year in which the U.S. shareholder held the Common Shares, either (i) 75% or more of our gross income for the taxable year is passive income; or (ii) the average value of our assets (during the taxable year) which produce or are held for the production of passive income is at least 50% of the average value of all assets for such year. Based on our income, assets and activities, we do not believe that we were a PFIC for U.S. federal income tax purposes for our taxable year ended December 31, 2022, and do not expect to be a PFIC for the current taxable year or any future taxable year. No assurances can be made, however, that the Internal Revenue Service will not challenge this position or that we will not subsequently become a PFIC.

Provisions of our Articles of Association and Dutch law and an option we have granted may make it difficult to replace or remove management and may inhibit or delay a takeover.

Our Articles of Association (Articles) provide that our shareholders may only suspend or dismiss our Managing Directors and Supervisory Directors against their wishes with a vote of two-thirds of the votes cast if such votes represent more than 50% of our issued share capital. If the proposal was made by the joint meeting of the Supervisory Board and the Managing Board, a simple majority is sufficient. The Articles also provide that if the members of our Supervisory Board and our Managing Board have been nominated by the joint meeting of the Supervisory Board and Managing Board, shareholders may only overrule this nomination with a vote of two-thirds of the votes cast if such votes represent more than 50% of our issued share capital.

Certain other provisions of our Articles allow us, under certain circumstances, to prevent a third party from obtaining a majority of the voting control of our Common Shares through the issuance of Preference Shares. Pursuant to our Articles and the resolution adopted by our General Meeting of Shareholders, our Supervisory Board is entitled to issue Preference Shares in case of an intended takeover of our company by (i) any person who alone or with one or more other persons, directly or indirectly, have acquired or given notice of an intent to acquire (beneficial) ownership of an equity stake which in aggregate equals 20% or more of our share capital then outstanding or (ii) an "adverse person" as determined by the Supervisory Board. If the Supervisory Board opposes an intended takeover and authorizes the issuance of Preference Shares, the bidder may withdraw its bid or enter into negotiations with the Managing Board and/or Supervisory Board and agree on a higher bid price for our Shares.

In 2004, we granted an option to the Stichting Preferente Aandelen QIAGEN, or the Foundation (*Stichting*), subject to the conditions described in the paragraph above, which allows the Foundation to acquire Preference Shares from us. The option enables the Foundation to acquire such number of Preference Shares as equals the number of our outstanding Common Shares at the time of the relevant exercise of the option, less one Preference Share. When exercising the option and exercising its voting rights on these Preference Shares, the Foundation must act in our interest and the interests of our stakeholders. The purpose of the Foundation option is to prevent or delay a change of control that would not be in the best interests of our stakeholders. An important restriction on the Foundation's ability to prevent or delay a change of control is that a public offer must be announced by a third party before it can issue (preference or other)

protective shares that would enable the Foundation to exercise rights to 30% or more of the voting rights without an obligation to make a mandatory offer for all shares held by the remaining shareholders. In addition, the holding period for these shares by the Foundation is restricted to two years, and this protective stake must fall below the 30% voting rights threshold before the two-year period ends.

Note Regarding Forward-Looking Statements and Risk Factors

Our future operating results may be affected by various risk factors, many of which are beyond our control. Certain statements included in this Annual Report and the documents incorporated herein by reference may be forward-looking statements within the meaning of Section 27A of the U.S. Securities Act of 1933, as amended, and Section 21E of the U.S. Securities Exchange Act of 1934, as amended, including statements regarding potential future net sales, gross profit, net income and liquidity. These statements can be identified by the use of forward-looking terminology such as "believe," "hope," "plan," "intend," "seek," "may," "will," "could," "should," "would," "expect," "anticipate," "estimate," "continue" or other similar words. Reference is made in particular to the description of our plans and objectives for future operations, assumptions underlying such plans and objectives, and other forward-looking statements. Such statements are based on management's current expectations and are subject to a number of factors and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. We caution investors that there can be no assurance that actual results or business conditions will not differ materially from those projected or suggested in such forward-looking statements as a result of various factors. Factors which could cause such results to differ materially from those described in the forward-looking statements include those set forth in the risk factors below. As a result, our future success involves a high degree of risk. When considering forward-looking statements, you should keep in mind that the risk factors could cause our actual results to differ significantly from those contained in any forward-looking statement.

Item 4. Information on the Company

Description of our business

Company overview

QIAGEN is a leading global provider of Sample to Insight solutions that enable customers to gain valuable molecular insights from samples containing the building blocks of life. Our sample technologies isolate and process deoxyribonucleic acid (DNA), ribonucleic acid (RNA) and proteins from blood, tissue and other materials. Assay technologies make these biomolecules visible and ready for analysis using a range of technologies. Bioinformatics software and knowledge bases are used to interpret complex data to provide relevant, actionable insights. Instruments and automation solutions are used to tie together these products into seamless and cost-effective workflows. We provide solutions to more than 500,000 customers around the world in Molecular Diagnostics (human healthcare) and Life Sciences (academic research, pharma and biotech companies, and applied applications such as human identification / forensics and food safety). As of December 31, 2022, we employed approximately 6,200 people in more than 35 locations worldwide.

QIAGEN began operations in 1986 as a pioneer in the emerging biotechnology sector with a revolutionary method that standardized and accelerated the extraction and purification of nucleic acids from biological samples, which means any material containing DNA, RNA or proteins. As molecular biology and genomic knowledge has grown to influence many areas of daily life, we have expanded to serve the full spectrum of market needs, developing new instruments, consumables and digital solutions; partnering with researchers and pharmaceutical companies, and acquiring companies and technologies that best complement our portfolio. We believe the addressable global market for our portfolio totals more than $11 billion. We continue to accelerate our portfolio growth and increase our efficiency and effectiveness while also enhancing our customer experience, our corporate citizenship, and our position as an employer of choice. Our growth strategy is anchored in our Five Pillars of Growth: sample technologies, the digital PCR (Polymerase Chain Reaction) platform QIAcuity, the clinical PCR automation solutions QIAstat-Dx and NeuMoDx and the QuantiFERON technology platform used to detect diseases such as latent tuberculosis. Our growth has been funded through internally generated funds, as well as debt offerings and the public sales of equity securities. Our global shares are listed on the New York Stock Exchange under the ticker symbol QGEN and on the Frankfurt Stock Exchange as QIA.

The company is registered under its commercial and legal name QIAGEN N.V. with the trade register (kamer van koophandel) of the Dutch region Limburg Noord under file number 12036979. QIAGEN N.V. is a public limited liability company (naamloze vennootschap) under Dutch law as a holding company. Our principal executive office is located at Hulsterweg 82, 5912 PL Venlo, The Netherlands, and our telephone number is +31-77-355-6600.

As a holding company, QIAGEN conducts business through subsidiaries around the world. Further information on QIAGEN can be found at www.qiagen.com. The SEC maintains an internet site (www.sec.gov/edgar) that contains reports and other information. Information contained in, or that can be accessed through, our website is not a part of, and shall not be incorporated by reference into, this Annual Report. We have included our website address in this document solely as an inactive textual reference.

QIAGEN Products

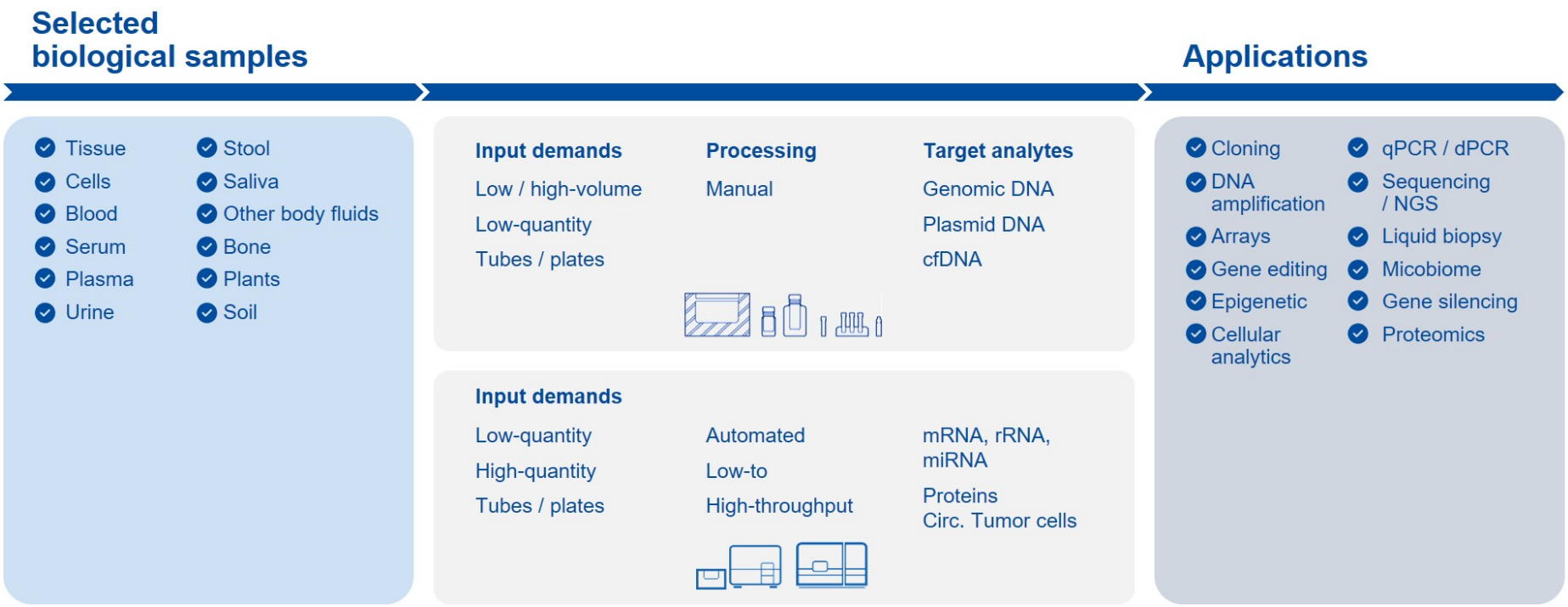
Our leadership in molecular research and testing solutions leverages our product portfolio across a wide range of applications. These are grouped into two main categories:

- Consumables and related revenues involve our consumables kits, bioinformatics solutions, royalties, co-development milestone payments and services (88% of total net sales in 2022)
- Instruments and related services and contracts (12% of total net sales in 2022).

QIAGEN Product Groups

Sample Technologies

Sample Technologies is the first of our Five Pillars of Growth and includes products involved in the first step of any molecular lab process.



Our broad portfolio of Sample Technologies includes consumables and instruments used in sample collection, stabilization, storage, purification and quality control. Some of our consumables are designed to run on our instruments, while others are universal kits designed for use with any molecular-testing platform. These products are used in research and applied testing (forensics, human identification and food safety) laboratories as well as clinical testing.

Sample technologies	**Selected QIAGEN brands**		
Primary sample technology consumables			
• Nucleic stabilization and purification kits designed for primary sample materials (DNA, RNA), manual and automated processing for genotyping, gene expression, viral and bacterial analysis • Mainly based on silica membrane and magnetic bead technologies	• QIAamp • PAXgene • AllPrep	• DNeasy • AdnaTest • QIAprep&amp	• RNeasy • MagAttract
Secondary sample technology consumables			
• Kits and components for purification of nucleic acids from secondary sample materials (e.g., gel, plasmid DNA)	• QIAprep • QIAGEN Plasmid • HiSpeed	• QIAquick • QIAfilter • EndoFree	• DyeEx • R.E.A.L.
Sample technology instruments			
• Instruments for nucleic acid purification, quality control and accessories	• QIAsymphony • EZ1 • TissueLyser	• QIAcube Connect • QIAxpert	• QIAcube HT • QIAxcel

Diagnostic Solutions

Diagnostic solutions include our molecular testing platforms and consumables covering three of our Five Pillars of Growth, which are QuantiFERON, QIAstat-Dx and NeuMoDx, as well as Precision Diagnostics which involves companion diagnostic co-development revenues from projects with pharmaceutical companies, regulated assays and solutions for laboratory developed tests. Additional areas include Oncology and Sexual & Reproductive Health for detection of various diseases and for use in prenatal testing for detection of infectious diseases and for other laboratory processes.

Diagnostic solutions	**Selected QIAGEN brands**		
Immune response consumables			
• Interferon-Gamma Release Assay (IGRA) for TB testing • Assays for post-transplant testing and viral load monitoring	• QuantiFERON	• QIAreach	
Oncology and Sexual & Reproductive health consumables			
• Assays for analysis of genomic variants such as mutations, insertions, deletions and fusions • Assays for prenatal testing and detection of sexually transmitted diseases and HPV	• Therascreen • AmniSure / PartoSure	• Ipsogen	• digene HC2
Sample to Insight instruments			
• One-step molecular analysis of hard-to-diagnose syndromes • Fully integrated PCR testing	• QIAstat-Dx	• NeuMoDx	

PCR / Nucleic Acid Amplification

PCR / Nucleic Acid Amplification involves our research and applied PCR solutions and components. The product group includes another of our Five Pillars of Growth: QIAcuity. We offer optimized solutions for end-point PCR, quantitative PCR and digital PCR. Our kits, assays, instruments and accessories amplify and detect targets and streamline workflow for virtually any application.

PCR/Nucleic acid amplification	Selected QIAGEN brands		
Research PCR consumables			
• Different generations of PCR, quantitative PCR, reverse transcription and combinations (RT-PCR) kits for analysis of gene expression, genotyping and gene regulation, running on QIAGEN or third-party instruments and technologies	• QuantiTect • OneStep RT-PCR • Type-it • OmniScript	• QuantiFast • QIAGEN Multiplex • miRCURY • miScript	• QuantiNova • HotStarTaq • TopTaq
Human ID / Forensics assay consumables			
• STR assays for Human ID, additional assays for food contamination	• Investigator (human ID / forensics)	• *mericon* (food safety)	
PCR instruments			
• Digital PCR solutions	• QIAcuity • Rotor-Gene Q	• QIAquant • QIAgility	• QIAamplifier 96
OEM consumables			
• Custom-developed and configured enzymes and PCR solutions that are sold to OEM customers	• Provided on an individualized contract basis		

Genomics / NGS

This product group includes our universal NGS (next-generation sequencing) solutions for use with any NGS sequencer as well as the full bioinformatics portfolio offered by QIAGEN Digital Insights.

Genomics / NGS	Selected QIAGEN brands		
Universal NGS consumables			
• Predefined and custom NGS gene panels (DNA, RNA), library prep kits and components, whole genome amplification, etc.	• QIAseq	• REPLI-g Epitect	
QIAGEN Digital Insights solutions			
• Bioinformatics solutions analyze and interpret data to deliver actionable insights from NGS. This includes freestanding software or cloud-based solutions and is also integrated into many QIAGEN consumables and instruments	• QIAGEN Clinical Insight • N-of-One • Ingenuity Variant Analysis	• CLC Genomics Workbench • OmicSoft • Ingenuity Pathway Analysis	• QIAGEN Knowledge Base • HGMD
Custom laboratory and genomic services			
• Custom services such as DNA sequencing, whole genome amplification, and non-cGMP DNA production	• Provided on an individualized contract basis		

Other

Revenues from various sources including protein biology products, royalties, intellectual property and freight charges.

Principal Markets

We sell our products to more than 500,000 customers in two broad customer groups: Molecular Diagnostics (clinical testing) and Life Sciences (academia, pharmaceutical R&D and applied testing). We estimate the total addressable market at over $11 billion annually.

Molecular Diagnostics

The molecular diagnostics market includes healthcare providers engaged in many aspects of patient care that require accurate diagnoses and insights to guide treatment decisions in oncology, infectious diseases and immune monitoring.

We offer one of the broadest portfolios of molecular technologies for healthcare. The success of molecular testing in healthcare depends on the ability to accurately analyze purified nucleic acid samples from sources such as blood, tissue, body fluids and stool. Automated systems process tests reliably and

efficiently, often handling hundreds of samples simultaneously. Our range of assays for diseases and biomarkers speed up and simplify laboratory workflow and standardize many lab procedures.

Molecular testing is the most dynamic segment of the global in vitro diagnostics market. The pandemic has demonstrated the value of molecular testing in healthcare and we expect the market to provide significant growth opportunities.

We have built a position as a preferred partner to co-develop companion diagnostics paired with targeted drugs and have created a rich pipeline of molecular tests that are transforming the treatment of cancer and other diseases. We have more than 25 master collaboration agreements with pharmaceutical industry customers, some with multiple co-development projects. In 2022, we continued to expand on these partnerships with new agreements, for example a new partnership with Neuron23 for the development of a companion diagnostic for Parkinson's disease. Also, our portfolio of assays was expanded following the FDA approval of a companion diagnostic for Mirati's therapy for Non-Small Cell Lung Cancer. Companion diagnostics move through clinical trials and regulatory approvals, along with the paired drugs, to commercialization and marketing to healthcare providers.

Molecular Diagnostics customers accounted for $1.1 billion, $1.1 billion, and $904 million of our sales in 2022, 2021 and 2020, respectively.

Selected Molecular Diagnostics products

Sample technologies	Assay technologies	Instruments	Bioinformatics
• Tissue • Blood • Liquid biopsy • Swabs, other	Indication areas • Oncology • Immune modulation • Infectious diseases Technologies: QuantiFERON, Polymerase Chain Reaction (PCR), Next-generation sequencing (NGS)	• QIAstat-Dx • NeuMoDx • QIAsymphony RGQ	QIAGEN Clinical Insight (QCI) • Hereditary diseases • Somatic and germline cancers • All diseases

Life Sciences

The Life Sciences market includes governments and biotechnology companies – and researchers who use molecular testing and technologies and are generally served by public funding in areas such as medicine and clinical development, forensics and exploring the building blocks of life.

We partner with customers across diverse disciplines in academia and industry, providing sample technologies, assay technologies, bioinformatics and services to universities and institutes, pharmaceutical and biotech companies, government and law enforcement agencies.

We provide Sample to Insight solutions to academic and research institutions around the world. We focus on enabling researchers to use reliable, fast, highly reproducible and high-quality technologies, sometimes replacing time-consuming traditional or in-house methods. We often partner with leading institutions on research projects and develop customized solutions such as NGS panels for the digital sequencing of multiple gene targets.

In the course of the COVID-19 pandemic, we served increased demand from viral and vaccine researchers for RNA extraction, general PCR reagents and enzymes, and universal NGS solutions.

We are a global leader in solutions for governments and industry, particularly in forensic testing and human identification. The value of genetic "fingerprinting" has been proven in criminal investigations and examinations of paternity or ancestry, as well as in food safety and veterinary diagnostics. We provide sample collection and analytical solutions for law enforcement and human identification labs, as well as advanced technologies for studies of microbiomes and their effect on health and the environment.

We have deep relationships with pharmaceutical and biotechnology companies. Drug discovery and translational research efforts increasingly employ genomic information, both to guide research in diseases and to differentiate patient populations that are most likely to respond to particular therapies. We estimate that about half of our sales to these companies supports research, while the other half supports clinical development, including stratification of patient populations based on genetic information. Also, QIAGEN Digital Insights solutions are widely used to guide pharmaceutical research.

Life Sciences customers accounted for $1.0 billion, $1.1 billion, and $966 million of our sales in 2022, 2021 and 2020, respectively.

Selected Life Sciences products

Sample technologies	Assay technologies	Instruments	Bioinformatics
• ~300 different kit types • Liquid biopsy, tissue, blood, cells, plants, microbiome, other	• Real-time PCR • Digital PCR • Next-generation sequencing	• QIAsymphony • QIAcube Connect • QIAcuity digital PCR • RotorGene Q	• Ingenuity Pathway Analysis (IPA) • Genomics Workbench / Server • Microbial Pro Suite / RNA-seq • Microbial Epigenetics

Competition

In sample technology products, we also experience competition in various markets from other companies providing sample preparation products in kit form and assay solutions. These competitors include, but are not limited to, companies with a focus on nucleic acid separation and purification, assay solutions, transfection reagents and protein fractionation products. We compete with other suppliers through innovative technologies and products, offering a comprehensive solution for nucleic acid collection, pre-treatment, separation and purification needs and providing significant advantages in speed, reliability, convenience, reproducibility and ease of use.

Some of our other products within our molecular diagnostics customer class, such as tests for chlamydia, gonorrhea, hepatitis B virus, herpes simplex virus and CMV, compete against existing screening, monitoring and diagnostic technologies, including tissue culture and antigen-based diagnostic methodologies. We believe the primary competitive factors in the market for gene-based probe diagnostics and other screening devices are clinical validation, performance and reliability, ease of use, standardization, cost, proprietary position, competitors' market shares, access to distribution channels, regulatory approvals and reimbursement.

We believe our competitors typically do not have the same comprehensive approach to sample to insight solutions as we do, nor do they have the ability to provide the broad range of technologies and depth of products and services that we offer. With our complete range of manual and fully automated solutions, we believe we offer the value of standardization of procedures and, therefore, more reliable results. We also believe our integrated strategic approach gives us a competitive advantage. The quality of sample technologies - an area in which we have a unique market and leadership position - is a key prerequisite for reliable molecular assay solutions, which increasingly are being applied in emerging markets such as Molecular Diagnostics and Applied Testing.

Current and potential competitors may be in the process of seeking FDA or foreign regulatory approvals for their respective products. Our continued future success will depend in large part on our ability to maintain our technological advantage over competing products, expand our market presence and preserve customer loyalty. There can be no assurance that we will be able to compete effectively in the future or that development by others will not render our technologies or products non-competitive.

Global Presence by Category of Activity and Geographic Market

Product Category Information

Net sales for the product categories are attributed based on those revenues related to sample and assay products and related revenues including bioinformatics solutions, and revenues derived from instrumentation sales.

Net Sales (in millions)	2022	2021	2020
Consumables and related revenues	$1,888.9	$1,986.3	$1,615.4
Instrumentation	252.6	265.3	254.9
Total	**$2,141.5**	**$2,251.7**	**$1,870.3**

Geographical Information

We currently market products in more than 130 countries. The following table shows total revenue by geographic market for the past three years (net sales are attributed to countries based on the location of the customer, as certain subsidiaries have international distribution):

Net Sales (in millions)	2022	2021	2020
United States	$909.6	$909.7	$728.6
Other Americas	88.1	97.7	96.9
Total Americas	997.8	1,007.4	825.5
Europe, Middle East and Africa	733.5	814.4	682.3
Asia Pacific, Japan and Rest of World	410.3	429.9	362.6
Total	**$2,141.5**	**$2,251.7**	**$1,870.3**

We have built an increasing presence in key markets as a growth strategy. In 2022, the top six growth markets—Brazil, India, China, South Korea, Mexico and Turkey—contributed approximately 13% of net sales. Russia was excluded as a market in early 2022 following the invasion of Ukraine, and subsequent decision to stop business activities in Russia and Belarus.

Seasonality

Our business does not experience significant predictable seasonality. Historically, a significant portion of our sales has been to researchers, universities, government laboratories and private foundations whose funding is dependent upon grants from government agencies, such as the National Institutes of Health and similar bodies. To the extent that our customers experience increases, decreases or delays in funding arrangements and budget approvals, and to the extent that customers' activities are slowed, such as during times of higher unemployment, vacation periods or delays in approval of government budgets, we may experience fluctuations in sales volumes during the year or delays from one period to the next in the recognition of sales. Additionally, we have customers who are active in the diagnostics testing market, and sales to these customers fluctuate to the extent that their activities are impacted by public health concerns such as the timing and severity of viral infections such as the influenza or SARS-CoV-2 viruses.

Suppliers

We strive to ensure that our quality standards, compliance with laws and regulations as well as environmental and social standards are maintained along the entire value chain of suppliers and partners. We demand the same from our business partners. Suppliers are subjected to a risk analysis with regard to environmental and social criteria based on their geographic location. Our supplier policy, which is available on our website, contains requirements with regard to legal compliance, bribery and corruption, labor rights, non-discrimination and fair treatment, health and safety as well as environmental protection and conservation. In 2022, all new suppliers have signed our supplier policy. In addition, first-tier suppliers must confirm REACH, RoHS and conflict minerals compliance as appropriate. As part of our supplier assessment procedures, we evaluate on a monthly basis the supply performance of our raw material and component suppliers, and we assess on a continuous basis potential alternative sources of such materials and components, and on a yearly basis the risks and benefits of reliance on our existing suppliers.

We buy materials for our products from many suppliers, and are not dependent on any one supplier or group of suppliers for our business as a whole. Raw materials generally include chemicals, raw separation media, biologics, plastics, electronics and packaging. Certain raw materials are produced under our specifications. We have inventory agreements with the majority of our suppliers and we closely monitor stock levels to maintain adequate supplies. In 2022, the volatility in product availability and pricing drastically increased compared to previous years. We have used long-term supply contracts to secure raw

materials and mitigate a majority of availability challenges that we have currently identified. The overall increase in energy costs and materials has had a significant adverse impact on our costs for raw materials, specifically plastics and packaging as well as for logistics. Long-term supply contracts have helped to limit the risks for shortages in electronic components, but have still resulted in price increases. We expect some level of market constraints to continue in 2023. We strive to maintain inventories at a sufficient level to ensure reasonable customer service levels and to guard against normal volatility in availability. These initiatives help us avoid shortages and keep pricing competitive.

Research and Development

We are committed to expanding our global leadership in Sample to Insight solutions in Molecular Diagnostics and the Life Sciences. We target our research and development resources at the most promising technologies to address the unmet needs of our customers in healthcare and research labs in key geographic markets.

Innovation at QIAGEN follows parallel paths:

- Creating new systems for automation of workflows - platforms for laboratories, hospitals and other users of novel molecular technologies.
- Expanding our broad portfolio of novel content - including assays to detect and measure biomarkers for disease or genetic identification.
- Integrating QIAGEN Digital Insights with the testing process - software and cloud-based resources to interpret and transform raw molecular data into useful insights.

Innovation in automation systems positions us in fast-growing fields of molecular testing, and generates ongoing demand for our consumable products. We are developing and commercializing a deep pipeline of assays for preventive screening and diagnostic profiling of diseases, detection of biomarkers to guide Precision Diagnostics in cancer and other diseases, and other molecular targets. Our assay development program aims to commercialize tests that will add value to our QIAsymphony, QIAstat-Dx and NeuMoDx automation systems in the coming years, as well as next-generation sequencing (NGS) kits to support our universal NGS franchise and our in vitro diagnostics partnership with Illumina. We continue to develop applications for the QIAcuity digital PCR system which is designed to make digital PCR technology available to Life Sciences laboratories worldwide.

Sales and Marketing

We market our products in more than 130 countries, mainly through subsidiaries in markets in the Americas, Europe, Australia and Asia with the greatest sales potential. Experienced marketing and sales staff, many of them scientists with academic degrees in molecular biology or related areas, sell our products and support our customers. Business managers oversee key accounts to ensure that we serve customers' commercial needs, such as procurement processes, financing, data on costs and the value of our systems, and collaborative relationships. In many markets, we have specialized independent distributors and importers.

Our marketing strategy focuses on providing differentiated, high-quality products across the value chain from Sample to Insight, integrating components into end-to-end solutions when possible, and enhancing relationships with commitment to technical excellence and customer service. Our omni-channel approach seeks to engage customers through their preferred channels - online, by phone, in person, etc. - and to optimize investment in different customer types.

We continue to drive the growth of our digital marketing channels - including our website (www.qiagen.com), product-specific sites and social media. Since the onset of the pandemic there has been an increase in virtual events and use of digital sales channels. We have likewise increased the activities in digital marketing to adapt to these market changes, such as installing an in-house studio to facilitate creation of video content and live virtual events.

Our eCommerce team works with clients to provide automated processes supporting a variety of electronic transactions and all major eProcurement systems. Information contained on our website, or accessed through it, is not part of this Annual Report.

My QIAGEN is an easy-to-use self-service portal that is personalized to our customers' needs and enables customers to manage different activities in one central place. Customers can now easily reorder, place bulk orders, apply quotes to their cart, and then track their order status. Functionality in the dashboard allows customers to monitor their instrument use and view the status of licenses and service agreements. Additionally, customers can access our exclusive content and services, such as webinars, handbooks and other documents.

Our GeneGlobe Design & Analysis Hub (www.geneglobe.com) is a valuable outreach to scientists in pharma and academia, enabling researchers to search and order from approximately 25 million pre-designed and custom PCR assay kits, NGS assay panels and other products. The new hub brings next-level experiment planning, execution and follow-up to life science researchers, linking our QIAGEN Digital Insights solutions with ordering of assays to accelerate research.

We use a range of tools to provide customers with direct access to technical support, inform them of new product offerings, and enhance our reputation for technical excellence, high-quality products and commitment to service. For example, our technical service hotline allows existing or potential customers to discuss a wide range of questions about our products and molecular biology procedures, online or via phone, with Ph.D. and M.Sc. scientists at QIAGEN. Frequent communication with customers enables us to identify market needs, learn of new developments and opportunities, and respond with new products.

We also distribute publications, including our catalog, to existing and potential customers worldwide, providing new product information, updates, and articles about existing and new applications. In addition, we hold numerous scientific seminars at clinical, academic and industrial research institutes worldwide and at major scientific and clinical meetings. We conduct direct marketing campaigns to announce new products and special promotions, and we offer personalized electronic newsletters and webinars highlighting molecular biology applications.

For laboratories that frequently rely on our consumables, the QIAstock program maintains inventory on-site to keep up with their requirements. QIAGEN representatives make regular visits to replenish the stock and help with other needs, and we are automating this process with digital technologies. Easy-to-use online ordering, inventory monitoring and customer-driven changes make QIAstock an efficient system for providing ready access to our products for the hundreds of customers worldwide who use this program.

Intellectual Property, Proprietary Rights and Licenses

We have made and expect to continue to make investments in intellectual property. In 2022, additions to our intangible assets outside of business combinations totaled $19.6 million. While we do not depend solely on any individual patent or technology, we are significantly dependent in the aggregate on technology that we own or license. Therefore, we consider protection of proprietary technologies and products one of the major keys to our business success. We rely on a combination of patents, licenses and trademarks to establish and protect proprietary rights. As of December 31, 2022, we owned 314 issued patents in the United States, 260 issued patents in Germany and 1,776 issued patents in other major industrialized countries. We had 370 pending patent applications. Our policy is to file patent applications in Western Europe, the United States and Japan. Patents in most countries have a term of 20 years from the date of filing the patent application. We intend to aggressively prosecute and enforce patents and to otherwise protect our proprietary technologies. We also rely on trade secrets, know-how, continuing technological innovation and licensing opportunities to develop and maintain our competitive position.

Our practice is to require employees, consultants, outside scientific collaborators, sponsored researchers and other advisers to execute confidentiality agreements upon commencement of their relationships with us. These agreements provide that all confidential information developed by or made known to the individual during the course of the relationship is to be kept confidential and not disclosed to third parties, subject to a right to publish certain information in scientific literature in certain circumstances and to other specific exceptions. In the case of our employees, the agreements provide that all inventions conceived by individuals in the course of their employment will be our exclusive property.

See “Risk Factors” included in Item 3 above for details regarding risks related to our reliance on patents and proprietary rights.

Government Regulations

We are subject to a variety of laws and regulations in the European Union, the United States and other countries. The level and scope of the regulation varies depending on the country or defined economic region, but may include, among other things, the research, development, testing, clinical trials, manufacture, storage, recordkeeping, approval, labeling, promotion and commercial sales and distribution, of many of our products.

European Union Regulations

In the European Union, in vitro diagnostic medical devices (IVDs) had been regulated under EU-Directive 98/79/EC (IVD Directive) and corresponding national provisions. The IVD Directive required that medical devices meet the essential requirements, including those relating to device safety and efficacy, set out in an annex of the Directive. According to the IVD Directive, EU Member States have presumed compliance with these essential requirements for devices that are in

conformity with the relevant national standards transposing the harmonized standards, such as ISO 13485:2016, the quality system standard for medical device manufacturers.

IVD medical devices, other than devices for performance evaluation, must bear the CE marking of conformity when they are placed on the European market. The CE mark is a declaration by the manufacturer that the product meets all the appropriate provisions of the applicable legislation implementing the relevant European Directive. As a general rule, the manufacturer must follow the EU declaration of conformity procedure to obtain or apply a CE mark.

In May 2022, the Directive was replaced by the In Vitro Diagnostic Device Regulation (IVDR) (EU) 2017/746 that was published in May 2017 and given a 5-year transition period until its full implementation on May 26, 2022. Unlike the IVD Directive, the IVDR has binding legal force throughout every Member State. The major goal of the IVDR was to standardize diagnostic procedures within the EU, increase reliability of diagnostic analysis and enhance patient safety. Under the IVDR as enacted by the European Commission (EC), IVDs are subject to additional legal regulatory requirements. Among other things, the IVDR introduces a new risk-based classification system and requirements for conformity assessments. Under the IVDR and subsequent amendments, IVDs already certified by a Notified Body may remain on the market until May 26, 2025, and IVDs certified without the involvement of a Notified Body may be placed on, or remain in, the market for up to two additional years (until May 26, 2027), or three years (until May 26, 2028) respectively, depending on the classification of the IVD. The manufacturers of such devices remaining on the market must comply with specific requirements in the IVDR, but ultimately, such products, as with all new IVDs, will have to undergo the IVDR's conformity assessment procedures. Under the IVD Directive the majority of QIAGEN products were classified as self-declared, while under IVDR most of QIAGEN products will require pre-approval, and those that are in the highest risk class will have to be tested by a Designated Reference Laboratory. In addition, the IVDR imposes additional requirements relating to post-market surveillance and submission of post-market performance follow-up reports.

The EC has designated seven (7) Notified Bodies to perform conformity assessments under the IVDR, including QIAGEN's Notified Bodies, TÜV Rheinland and BSI. MedTech Europe has issued guidance relating to the IVDR in several areas, e.g., clinical benefit, technical documentation, state of art, accessories, and EUDAMED. Open points still being addressed/defined are the designation of EU Reference Laboratories and Common Specification for high risk IVDs. With respect to the current COVID-19 pandemic, the EC has classified SARS-CoV-2 assays as high risk.

The General Data Protection Regulation (GDPR) of the European Union, imposes restrictions on the transfer, access, use, and disclosure of health and other personal information. We have implemented the requirements set forth by the GDPR, which took effect on May 25, 2018. GDPR and other EU data privacy and security laws impact our business either directly or indirectly. Our failure to comply with applicable privacy or security laws or significant changes in these laws could significantly impact our business and future business plans. For example, we may be subject to regulatory action, fines, or lawsuits in the event we fail to comply with applicable privacy laws. We may face significant liability in the event any of the personal information we maintain is lost or otherwise subject to misuse or other wrongful use, access or disclosure.

United Kingdom

The UK's withdrawal from the EU has major ramifications for IVD manufacturers. Among other things, companies now have to follow new procedures that apply in the UK, including appointment of a UK Responsible Person rather than relying on European Authorized Representatives, to manage their compliance efforts in the UK.

The UK Medicine and Healthcare Products Regulatory Agency (MHRA) issued guidance on how the country will regulate IVDs after January 1, 2021. According to MHRA, IVDs will require certification in the UK, which is defined as England, Scotland and Wales, while companies will still be able to sell tests in Northern Ireland under existing EU IVD regulations. Under subsequent amendments to MHRA guidance, MHRA will continue to recognize CE marks until December 31, 224 although companies wishing to place IVDs on the UK market were required to register as such with MHRA by June 30, 2023. After December 31, 2024, companies selling in the UK will have to obtain a new marking called a UK Conformity Assessed mark (UKCA).

United States

In the United States, in vitro diagnostic products are subject to regulation by the FDA as medical devices to the extent that they are intended for use in the diagnosis, treatment, mitigation or prevention of disease or other conditions.

Certain types of tests, like some that we manufacture and sell for research use only in the United States, are not subject to the FDA's premarket review and controls because we do not promote these tests for clinical diagnostic use, and they are labeled "For Research Use Only," or RUO, as required by the FDA. Other tests, known as laboratory developed tests (LDTs), which are IVDs that are designed, manufactured and used within a single, CLIA-certified, clinical laboratory that meets applicable requirements to perform high-complexity testing, have generally been subject to enforcement discretion and not actively regulated by the FDA. As LDTs have increased in complexity, the FDA has taken steps towards developing a risk-based approach to the regulation of LDTs; however, most LDTs currently remain under FDA enforcement discretion. Congress has also signaled interest in clarifying the regulatory landscape for LDTs. For several years, members of Congress have been working with stakeholders on a possible bill to regulate in vitro clinical tests including LDTs. Most recently, legislation called the Verifying Accurate, Leading-edge IVCT Development (VALID Act), has been garnering bipartisan and bicameral support. If enacted, clinical laboratories that develop and offer LDTs and traditional IVD medical device manufacturers would be subject to similar regulatory oversight. The VALID Act defines both LDTs and IVDs as in vitro clinical tests (IVCT) and would establish a new regulatory framework under the Food, Drug and Cosmetic Act (FDCA) for the review and oversight of IVCTs. The proposed regulatory framework adopts various concepts from the FDCA, utilizing a risk-based approach that aims to ensure that all marketed IVCTs have a reasonable assurance of both analytical and clinical validity.

Medical devices, including IVDs, are classified into one of three classes depending on the controls deemed by the FDA to be necessary to reasonably assure their safety and effectiveness. Class I devices are generally exempt from premarket review and are subject to general controls, including adherence to the FDA's Quality System Regulation (QSR), which describes device-specific current good manufacturing practices, as well as regulations requiring facility registration and product listing, reporting of adverse medical events, and appropriate, truthful and non-misleading labeling, advertising and promotional materials. Class II devices are generally subject to premarket notification (or 510(k) clearance), general controls and special controls, including performance standards, post-market surveillance, patient registries or FDA guidance documents describing device-specific special controls. Class III devices are subject to most of the previously identified requirements as well as to premarket approval (PMA). The payment of a user fee, which is typically adjusted annually, to the FDA is usually required upon filing a premarket submission (e.g., premarket notification, premarket approval, or De Novo classification request) for FDA review.

510(k) Premarket Notification. A 510(k) premarket notification requires the sponsor to demonstrate that a medical device is substantially equivalent to another marketed device, termed a "predicate device," that is legally marketed in the United States and is not subject to premarket approval. A device is substantially equivalent to a predicate device if its intended use(s), performance, safety and technological characteristics are similar to those of the predicate; or has a similar intended use but different technological characteristics, where the information submitted to the FDA does not raise new questions of safety and effectiveness and demonstrates that the device is at least as safe and effective as the legally marketed device.

If the FDA determines that the device (1) is not substantially equivalent to a predicate device, (2) has a new intended use compared to the identified predicate, (3) has different technological characteristics that raise different questions of safety and effectiveness, or (4) has new indications for use or technological characteristics and required performance data were not provided, it will issue a "Not Substantially Equivalent" (NSE) determination. If the FDA determines that the applicant's device is substantially equivalent to the identified predicate device(s), the agency will issue a 510(k) clearance letter that authorizes commercial marketing of the device for one or more specific indications for use.

De Novo Classification. If a previously unclassified new medical device does not qualify for the 510(k) premarket notification process because no predicate device to which it is substantially equivalent can be identified, the device is automatically classified into Class III. However, if such a device would be considered low or moderate risk (in other words, it does not rise to the level of requiring the approval of a PMA), it may be eligible for the De Novo classification process. The De Novo classification process allows a device developer to request that the novel medical device be reclassified as either a Class I or Class II device, rather than having it regulated as a high risk Class III device subject to the PMA requirements. If the manufacturer seeks reclassification into Class II, the classification request must include a draft proposal for special controls that are necessary to provide a reasonable assurance of the safety and effectiveness of the medical device.

Premarket Approval. The PMA process is more complex, costly and time consuming than the 510(k) process. A PMA must be supported by more detailed and comprehensive scientific evidence, including clinical data, to demonstrate the safety and efficacy of the medical device for its intended purpose. A clinical trial

involving a "significant risk" device may not begin until the sponsor submits an investigational device exemption (IDE) application to the FDA and obtains approval to begin the trial.

After the PMA is submitted, the FDA has 45 days to make a threshold determination that the PMA is sufficiently complete to permit a substantive review. If the PMA is complete, the FDA will file the PMA and begin the substantive review process. The FDA is subject to a performance goal review time for a PMA that is 180 days from the date of filing, although in practice this review time is longer. Questions from the FDA, requests for additional data and referrals to advisory committees may delay the process considerably. The total process may take several years and there is no guarantee that the PMA will ever be approved. Even if approved, the FDA may limit the indications for which the device may be marketed. The FDA may also request additional clinical data as a condition of approval or after the PMA is approved. Any changes to the medical device may require a supplemental PMA to be submitted and approved before the modified device may be marketed.

Any products manufactured and sold by us pursuant to FDA clearances or approvals will be subject to pervasive and continuing regulation by the FDA, including quality system requirements, record-keeping requirements, reporting of adverse experiences with the use of the device and restrictions on the advertising and promotion of our products. Device manufacturers are required to register their establishments and list their devices with the FDA and are subject to periodic inspections by the FDA and certain state agencies. Noncompliance with applicable FDA requirements can result in, among other things, warning letters, fines, injunctions, civil penalties, recalls or seizures of products, total or partial suspension of production, refusal of the FDA to grant 510(k) clearance or PMA approval for new devices, withdrawal of 510(k) clearances and/or PMA approvals and criminal prosecution.

As a result of the COVID-19 pandemic, the Secretary of the U.S. Department of Health and Human Services declared a public health emergency and authorized the FDA to issue emergency use authorizations (EUAs) to provide more timely access to critical medical countermeasures (including medicines and diagnostic tests) when there are no adequate, approved, and available alternative options. EUAs remain in effect until the emergency declaration ends unless the FDA decides to revise or revoke an EUA at an earlier point as the agency considers public health needs during the emergency and new data on an authorized product's safety and effectiveness, or as products meet the criteria for FDA approval or clearance. Manufacturers of several types of SARS-CoV-2 assays have been granted EUAs, including QIAGEN. The FDA has indicated the withdrawal of EUAs for COVID-19 countermeasures will be done in a gradual, phased process and issued draft guidance on a transitional plan.

Regulation of Companion Diagnostic Devices

If a sponsor or the FDA believes that a diagnostic test is essential for the safe and effective use of a corresponding therapeutic product, the sponsor of the therapeutic product will typically work with a collaborator to develop an in vitro companion diagnostic device. The FDA defines an IVD companion diagnostic device as a device that provides information that is essential for the safe and effective use of a corresponding therapeutic product.

The FDA has also introduced the concept of complementary diagnostics that are distinct from companion diagnostics because they provide additional information about how a drug is used or identify patients who are likely to derive the greatest benefit from therapy without being required for the safe and effective use of that drug. The FDA has not yet provided much guidance on the regulation and use of complementary diagnostics, but several have been approved.

The FDA indicated that it will apply a risk-based approach to determine the regulatory pathway for IVD companion diagnostic devices, as it does with all medical devices. This means that the regulatory pathway will depend on the level of risk to patients, based on the intended use of the IVD companion diagnostic device and the controls necessary to provide a reasonable assurance of safety and effectiveness. We expect that any IVD companion diagnostic device that we develop will utilize the PMA pathway and that a clinical trial performed under an IDE will have to be completed before the PMA may be submitted.

The FDA expects that the therapeutic sponsor will address the need for an IVD companion diagnostic device in its therapeutic product development plan and that, in most cases, the therapeutic product and its corresponding IVD companion diagnostic device will be developed contemporaneously. If the companion diagnostic test will be used to make critical treatment decisions such as patient selection, treatment assignment, or treatment arm, it will likely be considered a significant risk device for which a clinical trial will be required.

The sponsor of the IVD companion diagnostic device will be required to comply with the FDA's IDE requirements that apply to clinical trials of significant risk devices. If the diagnostic test and the therapeutic drug are studied together to support their respective approvals, the clinical trial must meet both the IDE and IND requirements.

Regulation of Research Use Only Products

Some of our products are sold for research purposes in the United States, and labeled "For Research Use Only" (RUO) or "for molecular biology applications." RUO refers to devices that are in the laboratory phase of development, while investigational use only, or IUO, refers to devices that are in the product testing phase of development. These types of devices are exempt from most regulatory controls pursuant to long-standing FDA guidance on RUO/IUO diagnostics. Because we do not promote our RUOs for clinical diagnostic use, or provide technical assistance to clinical laboratories with respect to these tests, we believe that these tests are exempt from FDA's premarket review and other requirements. If the FDA were to disagree with our designation of any of these products, we could be forced to stop selling the product until we obtain appropriate regulatory clearance or approval. Further, it is possible that some of our RUOs may be used by some customers without our knowledge in their LDTs, which they may then develop, validate and promote for clinical use. However, QIAGEN does not promote these products for use in LDTs or assist in the development of such LDTs for clinical diagnostic use.

HIPAA and Other Privacy and Security Laws

The Health Insurance Portability and Accountability Act of 1996 (HIPAA), established comprehensive federal standards for the privacy and security of health information. The HIPAA standards apply to health plans, healthcare clearing houses, and healthcare providers that conduct certain healthcare transactions electronically (Covered Entities,), as well as individuals or entities that perform services for them involving the use, or disclosure of, individually identifiable health information or "protected health information" under HIPAA. Such service providers are called "Business Associates." Title II of HIPAA, the Administrative Simplification Act, contains provisions that address the privacy of health data, the security of health data, the standardization of identifying numbers used in the healthcare system and the standardization of certain healthcare transactions. The privacy regulations protect medical records and other protected health information by limiting their use and release, giving patients the right to access their medical records and limiting most disclosures of health information to the minimum amount necessary to accomplish an intended purpose. The HIPAA security standards require the adoption of administrative, physical, and technical safeguards and the adoption of written security policies and procedures to maintain the security of protected health information.

On February 17, 2009, Congress enacted Subtitle D of the Health Information Technology for Economic and Clinical Health Act (HITECH) provisions of the American Recovery and Reinvestment Act of 2009. HITECH expanded and strengthened HIPAA, created new targets for enforcement, imposed new penalties for noncompliance and established new breach notification requirements for Covered Entities and Business Associates.

Under 'HITECH's breach notification requirements, Covered Entities must report breaches of protected health information that has not been encrypted or otherwise secured. Required breach notices must be made as soon as is reasonably practicable, but no later than 60 days following discovery of the breach. Reports must be made to affected individuals and to the Secretary and, in some cases depending on the size of the breach, they must be reported through local and national media. Breach reports can lead to investigation, enforcement and civil litigation, including class action lawsuits.

Our Redwood City entity serves in some cases as a Business Associate to customers who are subject to the HIPAA regulations. In this capacity, we maintain an active compliance program that is designed to identify security incidents and other issues in a timely fashion and enable us to remediate, mitigate harm or report if required by law. We are subject to prosecution and/or administrative enforcement and increased civil and criminal penalties for non-compliance, including a new, four-tiered system of monetary penalties adopted under HITECH. We are also subject to enforcement by state attorneys general who were given authority to enforce HIPAA under HITECH. To avoid penalties under the HITECH breach notification provisions, we must ensure that breaches of protected health information are promptly detected and reported within the company, so that we can make all required notifications on a timely basis. However, even if we make required reports on a timely basis, we may still be subject to penalties for the underlying breach.

California has also adopted the California Consumer Privacy Act of 2018, or CCPA, which took effect on January 1, 2020 and became enforceable by the state attorney general on July 1, 2020. The CCPA establishes a new privacy framework for covered businesses by creating an expanded definition of personal information, establishing new data privacy rights for consumers in the State of California, imposing special rules on the collection of consumer data from

minors, and creating a new and potentially severe statutory damages framework for violations of the CCPA and for businesses that fail to implement reasonable security procedures and practices to prevent data breaches.

The regulations issued under the CCPA have been modified several times. Additionally, a new privacy law, the California Privacy Rights Act, or CPRA, was approved by California voters in the election on November 3, 2020. The CPRA imposes additional data protection obligations on companies doing business in California, including additional consumer rights processes, limitations on data uses, new audit requirements for higher risk data, and opt outs for certain uses of sensitive data. It will also create a new California data protection agency authorized to issue substantive regulations and could result in increased privacy and information security enforcement. The majority of the provisions become effective on January 1, 2023, and additional compliance investment and potential business process changes may be required. Similar laws have been adopted in other states (for example, Nevada, Virginia, Connecticut, Utah and Colorado) or proposed in other states and at the federal level, and if passed, such laws may have potentially conflicting requirements that would make compliance challenging.

Many states have also implemented genetic testing and privacy laws imposing specific patient consent requirements and protecting test results by strictly limiting the disclosure of those results. State requirements are particularly stringent regarding predictive genetic tests, due to the risk of genetic discrimination against healthy patients identified through testing as being at a high risk for disease. We believe that we have taken the steps required of us to comply with health information privacy and security statutes and regulations, including genetic testing and genetic information privacy laws in all jurisdictions, both state and federal. However, these laws constantly change, and we may not be able to maintain compliance in all jurisdictions where we do business. Failure to maintain compliance, or changes in state or federal laws regarding privacy or security could result in civil and/or criminal penalties, significant reputational damage and could have a material adverse effect on our business.

U.S. Fraud and Abuse Laws and Other Healthcare Regulations

A variety of state and federal laws prohibit fraud and abuse involving state and federal healthcare programs, as well as commercial insurers. These laws are interpreted broadly and enforced aggressively by various federal and state agencies, including the Centers for Medicare & Medicaid Services (CMS), the Department of Justice (DOJ), and the Office of Inspector General for the U.S. Department of Health and Human Services (OIG). The Company seeks to conduct its business in compliance with all applicable federal and state laws.

State and federal fraud and abuse laws may be interpreted and applied differently, and arrangements and business practices could be subject to scrutiny under them by federal or state enforcement agencies. Sanctions for violations of these laws could result in a wide range of penalties, including but not limited to significant criminal sanctions, civil fines and penalties.

The Anti-Kickback Statute

The federal Anti-Kickback Statute (AKS) is a criminal statute that prohibits, in pertinent part, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in cash or in kind, in exchange for or to induce a person:

- To refer an individual to a person for the furnishing or arranging for the furnishing of any item or service for which payment may be made by federal healthcare programs; or
- To purchase, lease, order, or arrange for or recommend purchasing, leasing, or ordering, any good, facility, service, or item for which payment may be made by a federal healthcare program.

A person or entity does not need to have actual knowledge of the AKS or specific intent to violate it to have committed a violation. Recognizing that the AKS is broad and potentially applies to innocuous or beneficial arrangements, the OIG issued regulations, commonly known as "safe harbors," which set forth certain requirements that, if fully met, insulate a given arrangement or conduct from prosecution under the AKS. The AKS also has statutory exceptions that provide protection similar to that of safe harbors. If, however, an arrangement does not meet every requirement of an exception or safe harbor, the arrangement does not necessarily violate the AKS. A facts-and-circumstances analysis is necessary to determine AKS compliance or lack thereof. Potential statutory penalties for violating the AKS include imprisonment and criminal fines. In addition, through application of other laws, conduct that violates the AKS can give rise to civil

monetary penalties and possible exclusion from participation in Medicare, Medicaid, and other federal healthcare programs. Claims including items or services resulting from a violation of the AKS also constitute a false or fraudulent claim for purposes of the False Claims Act.

In addition to the federal AKS, many states have their own anti-kickback laws. Often, these laws closely follow the language of the federal law, although they do not always have the same scope, exceptions, safe harbors or sanctions. In some states, these anti-kickback laws apply to both state healthcare programs and commercial insurers. The penalties for violating state anti-kickback provisions can be severe, including criminal and civil penalties (including penalties under the state false claims law), imprisonment, and exclusion from state healthcare programs.

The False Claims Act

The federal False Claims Act (FCA) imposes civil liability on any person or entity that, among other things, knowingly presents, or causes to be presented, to the federal government, claims for payment that are false or fraudulent; knowingly makes, uses or causes to be made or used, a false statement or record material to a false or fraudulent claim or obligation to pay or transmit money or property to the federal government; or knowingly conceals or knowingly and improperly avoids or decreases an obligation to pay money to the federal government. The FCA also prohibits the knowing retention of overpayments (sometimes referred to as "reverse false claims").

In addition, the FCA permits a private individual acting as a "whistleblower" (also referred to as a "relator") to bring FCA actions on behalf of the federal government under the statute's qui tam provisions, and to share in any monetary recovery. The federal government may elect or decline to intervene in such matters, but if the government declines intervention, the whistleblower may still proceed with the litigation on the government's behalf.

Penalties for violating the FCA include payment of up to three times the actual damages sustained by the government, plus substantial per-claim statutory penalties, as well as possible exclusion from participation in federal healthcare programs.

Various states have enacted similar laws modeled after the FCA that apply to items and services reimbursed under Medicaid and other state healthcare programs, and, in several states, such laws apply to claims submitted to any payor, including commercial insurers.

There is also a federal criminal false claims statute that prohibits, in pertinent part, the making or presentation of a false claim, knowing such claim to be false, to any person or officer in the civil, military, or naval service or any department or agency thereof. Potential penalties for violating this statute include fines or imprisonment.

Health Care Fraud and False Statements

The federal healthcare fraud statute criminalizes, in pertinent part, knowingly and willfully defrauding a healthcare benefit program, which is defined to include commercial insurers. A violation of this statute may result in fines, imprisonment, or exclusion from participation in federal healthcare programs. The federal criminal statute prohibiting false statements relating to health care matters prohibits, in pertinent part, knowingly and willfully (i) falsifying, concealing, or covering up a material fact, or (ii) making a materially false, fictitious, or fraudulent statement or representation, or making or using any materially false writing or document knowing that writing or document to contain any materially false, fictitious, or fraudulent statements, in connection with the delivery of or payment for healthcare benefits, items, or services. A violation of this statute may result in fines or imprisonment.

Civil Monetary Penalties Law

The federal Civil Monetary Penalties Law (CMP Law) prohibits, among other things, (1) the offering or transfer of remuneration to a beneficiary of Medicare or a state healthcare program if the person knows or should know it is likely to influence the beneficiary's selection of a particular provider, practitioner, or supplier of services reimbursable by Medicare or a state healthcare program, unless an exception applies; (2) employing or contracting with an individual or entity that the provider knows or should know is excluded from participation in a federal healthcare program; (3) billing for services requested by an unlicensed physician or an excluded provider; and (4) billing for medically unnecessary services. The potential penalties for violating the CMP Law include exclusion from participation in federal healthcare programs, substantial fines, and payment of up to three times the amount billed, depending on the nature of the offense.

Physician Payments Sunshine Act

The federal Physician Payments Sunshine Act (Sunshine Act) imposes reporting requirements on manufacturers of certain devices, drugs, biologics, and medical supplies for which payment is available under Medicare, Medicaid, or the Children's Health Insurance Program (CHIP), with certain exceptions. Manufacturers to which the Sunshine Act applies must collect and report annually certain data on certain payments and transfers of value by them (and in some cases their distributors) to physicians, teaching hospitals, and certain advanced non-physician healthcare practitioners, as well as ownership and investment interests held by physicians and their immediate family members. For reporting beginning January 1, 2022, U.S.-licensed physician assistants, clinical nurse specialists, certified nurse-midwives, certified nurse anesthetists, and nurse practitioners must be included in the provider types subject to Sunshine Act reporting. The reporting program (known as the Open Payments program) is administered by CMS.

There are also an increasing number of state "sunshine" laws that require manufacturers to provide reports to state governments on pricing and marketing information. Several states have enacted legislation requiring manufacturers, including medical device companies to, among other things, establish marketing compliance programs, file periodic reports with the state, make periodic public disclosures on sales and marketing activities, and to prohibit or limit certain other sales and marketing practices.

Failure to comply with the Sunshine Act or state equivalents could result in civil monetary penalties, among other sanctions, depending upon the nature of the violation.

Despite extensive procedures to ensure compliance, we may also be exposed to liabilities under the U.S. Foreign Corrupt Practices Act (FCPA), which generally prohibits companies and their intermediaries from making corrupt payments to foreign officials for the purpose of obtaining or maintaining business or otherwise obtaining favorable treatment, and requires companies to maintain adequate record-keeping and internal accounting practices to accurately reflect the transactions of the company. We are also subject to a number of other laws and regulations relating to money laundering, international money transfers and electronic fund transfers. These laws apply to companies, individual directors, officers, employees and agents.

Environment, Health and Safety

We are subject to laws and regulations related to the protection of the environment, the health and safety of employees and the handling, transportation and disposal of medical specimens, infectious and hazardous waste and radioactive materials. For example, the U.S. Occupational Safety and Health Administration (OSHA) has established extensive requirements relating specifically to workplace safety for healthcare employers in the U.S. This includes requirements to develop and implement multi-faceted programs to protect workers from exposure to blood-borne pathogens, such as HIV and hepatitis B and C, including preventing or minimizing any exposure through needle stick injuries. For purposes of transportation, some biological materials and laboratory supplies are classified as hazardous materials and are subject to regulation by one or more of the following agencies: the U.S. Department of Transportation, the U.S. Public Health Service, the United States Postal Service and the International Air Transport Association. The U.S. Environmental Protection Agency (EPA) has also promulgated regulations setting forth importation, labelling, and registration requirements, among others, which may apply to certain products and/or establishments of the company.

Rest of the World Regulation

In addition to regulations in the United States and the EU, we are subject to a variety of regulations governing clinical studies and commercial sales and distribution of molecular testing instruments, consumables and digital solutions in other jurisdictions around the world. These laws and regulations typically require the licensing of manufacturing facilities, as well as controlled research, testing and governmental authorization of product candidates. Additionally, they may require adherence to good manufacturing, clinical and laboratory practices.

We must obtain approval from regulatory authorities in all countries where we distribute our products. The requirements governing the conduct of product authorization, pricing and reimbursement vary greatly from country to country. If we fail to comply with applicable regulatory requirements, we may be subject to, among other things, fines, suspension or withdrawal of regulatory approvals, product recalls, seizure of products, operating restrictions, or criminal prosecution.

Reimbursement

United States

In the United States, payments for diagnostic tests come from several sources, including commercial insurers, (which might include health maintenance organizations and preferred provider organizations); government healthcare programs (such as Medicare or Medicaid); and, in many cases, the patients themselves. For many years, federal and state governments in the United States have pursued methods to reduce the cost of healthcare delivery. For example, in 2010, the United States enacted major healthcare reform legislation known as the Patient Protection and Affordable Care Act (ACA). Such changes have had, and are expected to continue to have, an impact on our business.

In addition, in August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers up to 2% per fiscal year, and, due to subsequent legislative amendments, will remain in effect through 2032 unless additional Congressional action is taken.

We frequently identify value propositions on our products and communicate them to payors, providers, and patient stakeholders and attempt to positively impact coverage, coding and payment pathways. However, we have no direct control over payor decisions with respect to coverage and payment levels for our products. The manner and level of reimbursement may depend on the site of care, the procedure(s) performed, the final patient diagnosis, the device(s) and/or drug(s) utilized, the available budget, or a combination of these factors, and coverage and payment levels are determined at each payor's discretion. Changes in reimbursement levels or methods may positively or negatively affect sales of our products in any given country for any given product. At QIAGEN, we work with several specialized reimbursement consulting companies and maintain regular contact with payors.

As government programs seek to expand healthcare coverage for their citizens, they have at the same time sought to control costs by limiting the amount of reimbursement they will pay for particular procedures, products or services. Many third-party payors have developed payment and delivery mechanisms to support cost control efforts and to focus on paying for quality. Such mechanisms include payment reductions, pay-for-performance metrics, quality-based performance payments, restrictive coverage policies, studies to compare effectiveness and patient outcomes, and technology assessments. These changes have increased emphasis on the delivery of more cost-effective and quality-driven healthcare.

Code Assignment. In the United States, a third-party payor's decisions regarding coverage and payment are impacted, in large part, by the specific Current Procedural Terminology (CPT) code used to identify a test. The American Medical Association (AMA) publishes the CPT, which identifies codes, along with descriptions, for reporting medical services and procedures. The purpose of the CPT is to provide a uniform language that accurately describes medical, surgical, and diagnostic services and therefore to ensure reliable nationwide communication among healthcare providers, patients, and third-party payors. CMS uses its own Healthcare Common Procedure Coding System (HCPCS) codes for medical billing and reimbursement purposes. Level I HCPCS codes are comprised of current CPT codes, while Level II HCPCS codes primarily represent non-physician services and Level III HCPCS codes are local codes developed by Medicaid agencies, Medicare contractors and commercial insurers. Proprietary Laboratory Analyses (PLA) Codes are an addition to the CPT® code set approved by the AMA CPT® Editorial Panel. They are alpha-numeric CPT codes with a corresponding descriptor for labs or manufacturers that want to more specifically identify their test.

A manufacturer of in vitro diagnostic kits or a provider of laboratory services may request establishment of a Category I CPT code for a new product or a PLA Code or both. In addition, Z-Code identifiers are unique five-character alphanumeric tracking codes associated with a specific molecular diagnostic test. When a claim is submitted, it includes the associated CPT code and the Z-Code identifier is entered as a device code. Assignment of a specific CPT code ensures routine processing and payment for a diagnostic test by both commercial insurers and government payors.

The AMA has specific procedures for establishing a new CPT code and, if appropriate, for modifying existing nomenclature to incorporate a new test into an existing code. If the AMA concludes that a new code or modification of nomenclature is unnecessary, the AMA will inform the requestor how to use one or more existing codes to report the test.

While the AMA's decision is pending, billing and collection may be sought under an existing, non-specific CPT code. A manufacturer or provider may decide not to request assignment of a CPT code and instead use an existing, non-specific code for reimbursement purposes. However, use of such codes may result in more frequent denials and/or requests for supporting clinical documentation from the third-party payor and in lower reimbursement rates, which may vary based on geographical location.

CMS reimbursement rates for clinical diagnostic tests are defined by CPT and HCPCS codes in the Clinical Laboratory Fee Schedule (CLFS). In 2012, the AMA added 127 new CPT codes for molecular pathology services that became effective on January 1, 2013. These new CPT codes are biomarker specific and were designed to replace the previous methodology of billing for molecular pathology testing, which involved "stacking" a series of non-biomarker specific CPT codes together to describe the testing performed. CMS issued final national reimbursement prices for the new CPT codes in November 2013. These federal reimbursement amounts are widely acknowledged to be lower than the reimbursement obtained by the now outdated "stacking" method, but commercial insurers and Medicare contractors are still in the process of solidifying their coverage and reimbursement policies for the testing described by these new CPT codes.

As of January 1, 2018, in accordance with the Protecting Access to Medicare Act of 2014 (PAMA), applicable laboratories are required to report to CMS commercial insurer payment rates and volumes for their tests. CMS uses the data reported and the HCPCS code associated with the test to calculate a weighted median payment rate for each test, which is used to establish revised Medicare CLFS reimbursement rates for certain clinical diagnostic laboratory tests (CDLTs), subject to certain phase-in limits. For a CDLT that is assigned a new or substantially revised CPT code, the initial payment rate is assigned using the gap-fill methodology.

If the test at issue falls into the category of new advanced diagnostic laboratory test (ADLT) instead of CDLT, the test will be paid based on an actual list charge for an initial period of three quarters, before being shifted to the weighted median commercial insurer rate reported by the laboratory performing the ADLT. Laboratories offering ADLTs are subject to recoupment if the actual list charge exceeds the weighted median private payor rate by a certain amount.

On December 20, 2019, the President signed the Further Consolidated Appropriations Act, which included the Laboratory Access for Beneficiaries Act (LAB Act). The LAB Act delayed until the first quarter of 2021 the reporting of payment data under PAMA for CDLTs that are not ADLTs. The Coronavirus Aid, Relief, and Economic Security Act (CARES Act), which Congress passed in March 2020, again delayed reporting by an additional year, until the first quarter of 2022. The CARES Act also delayed the next PAMA reporting period for CDLTs to January 1, 2022 through March 31, 2022. Then, on December 10, 2021, Congress passed the Protecting Medicare and American Farmers from Sequester Cuts Act, which included a provision that further delays the next PAMA reporting period for CDLTs that are not ADLTs to January 1, 2023 through March 31, 2023. Finally, on December 29, 2022, Section 4114 of the Consolidated Appropriations Act for 2023, revised the next data reporting period for CDLTs that are to ADLTs and the phase-in of payment reductions. The next data reporting period of January 1, 2024 through March 31, 2024, will be based on the original data collection period of January 1, 2019 through June 30, 2019. The statutory phase-in of payment reductions resulting from private payor rate implementation is now extended through calendar year 2026, which means that there is no reduction for calendar years 2021, 2022, and 2023 and payment may not be reduced by more than 15 percent for calendar years 2024, 2025, and 2026.

CMS's methodology under PAMA (as well as the willingness of commercial insurers to recognize the value of diagnostic testing and pay for that testing accordingly) renders commercial insurer payment levels even more significant. This calculation methodology has resulted in significant reductions in reimbursement, even though CMS imposed caps on those reductions. Given the many uncertainties built into PAMA's price-setting process, it is difficult to predict how payments made by CMS under the CLFS may change from year to year.

Coverage Decisions: When deciding whether to cover a particular diagnostic test, third-party payors generally consider whether the test is a medically necessary and, if so, whether the test will directly impact clinical decision making. For coverage, the testing method should be considered scientifically valid to identify the specific gene biomarker or gene mutation, and must have been demonstrated to improve clinical outcomes for the patient's condition. Coverage of a drug therapy and its companion diagnostic for cancer treatment indications may be validated by a NCCN category 1, 2A or 2B recommendation. However, most third-party payors do not cover experimental services. Coverage determinations are often influenced by current standards of practice and clinical data, particularly at the local level. CMS has the authority to make coverage determinations on a national basis, but most Medicare coverage decisions are made at the local level by contractors that administer the Medicare program in specified geographic areas. Commercial insurers and government payors have separate

processes for making coverage determinations, and commercial insurer may or may not follow Medicare's coverage decisions. If a third-party payor has a coverage determination in place for a particular diagnostic test, billing for that test must comply with the established policy. Otherwise, the third-party payor makes reimbursement decisions on a case-by-case basis.

Payment: Payment for covered diagnostic tests is determined based on various methodologies, including prospective payment systems and fee schedules. In addition, commercial insurers may negotiate contractual rates with participating providers, establish fee schedule rates, or set rates as a percentage of the billed charge. Diagnostic tests furnished to Medicare inpatients generally are included in the bundled payment made to the hospital under Medicare's Inpatient Prospective Payment System, utilizing Diagnosis Related Groups (DRGs) depending on the patient's condition. Payment rates for diagnostic tests furnished to Medicare beneficiaries in outpatient settings are the lesser of the amount billed, the local fee for a geographic area, or a national limit. Each year, the fee schedule is updated for inflation and could be modified by Congress in accordance with the CLFS rules and provisions. Medicaid programs generally pay for diagnostic tests based on a fee schedule, but reimbursement varies by geographic region.

European Union

In the European Union, the reimbursement mechanisms used by private and public health insurers vary by country. For the public systems, reimbursement is determined by guidelines established by the legislator or responsible national authority. As elsewhere, inclusion in reimbursement catalogues focuses on the medical usefulness, need, quality and economic benefits to patients and the healthcare system. Acceptance for reimbursement comes with cost, use, and often volume restrictions, which again can vary by country.

Conflict Minerals

U.S. legislation has been enacted to improve transparency and accountability concerning the sourcing of conflict minerals from mines located in the conflict zones of the Democratic Republic of Congo (DRC) and its adjoining countries. The term conflict minerals currently encompasses tantalum, tin, tungsten (or their ores) and gold. Certain of our instrumentation product components that we purchase from third party suppliers contain gold. This U.S. legislation requires manufacturers, such as us, to investigate our supply chain and disclose if there is any use of conflict minerals originating in the DRC or adjoining countries. We conduct due diligence measures annually to determine the presence of conflict minerals in our products and the source of any such conflict minerals. Because we do not purchase conflict minerals directly from smelters or refineries, we rely on our suppliers to specify to us their conflict minerals sources and declare their conflict minerals status. We disclosed our most recent conflict minerals findings to the Securities Exchange Commission for the calendar year ending December 31, 2021 on Form SD on May 31, 2022 and will provide updated disclosure to the Securities Exchange Commission as required.

Organizational Structure

QIAGEN N.V. is the holding company for more than 50 consolidated subsidiaries, many of which have the primary function of distributing our products and services on a regional basis. Certain subsidiaries also have research and development or production activities. A listing of our significant subsidiaries and their jurisdictions of incorporation is included in Exhibit 8.1 to this Annual Report.

Description of Property

Our primary production and manufacturing facilities for consumable products are located in Germany, the United States, Spain and China. Our facilities for software development are located in the United States, Germany, Poland, Denmark and Romania. In recent years, we have made investments in automated and interchangeable production equipment to increase our production capacity and improve efficiency. Our production and manufacturing operations are highly integrated and benefit from sophisticated inventory control. Production management personnel are highly qualified, and many have advanced degrees in engineering, business and science. We also have installed and continue to expand production-planning systems that are included in our integrated information and control system based on the SAP R/3 business software package from SAP SE. Worldwide, we use SAP software to integrate most of our operating subsidiaries. Capital expenditures for property, plant and equipment totaled $129.2 million, $189.9 million and $132.8 million for 2022, 2021 and 2020, respectively.

We have an established quality system, including standard manufacturing and documentation procedures, intended to ensure that products are produced and tested in accordance with the FDA's Quality System Regulations, which impose current Good Manufacturing Practice (cGMP) requirements. For facilities that accommodate cGMP production, special areas were built and these facilities operate in accordance with cGMP requirements.

The consumable products manufactured at QIAGEN GmbH in Germany, and QIAGEN Sciences LLC in Maryland, are produced under ISO 9001: 2015, ISO 13485:2016, MDSAP. Our certifications form part of our ongoing commitment to provide our customers with high-quality, state-of-the-art sample and assay technologies under our Total Quality Management system.

Our corporate headquarters are located in leased office space in Venlo, The Netherlands. The below table summarizes our material facilities. Other subsidiaries throughout the world lease smaller amounts of space.

Location	Country	Purpose	Owned or Leased	Square feet
Hilden	Germany	Manufacturing, warehousing, distribution, research and development, and administration	Owned	983,000
Germantown, Maryland	U.S.	Manufacturing, warehousing, distribution, and administration	Owned	285,000
Shenzhen	China	Development, manufacturing, warehousing, distribution, and administration	Leased	102,150
Manchester	UK	Development and Service Solutions	Leased	96,300
Ann Arbor, Michigan	U.S.	Manufacturing, warehousing, distribution, and administration	Leased	81,000
Wroclaw	Poland	Business service center	Leased	65,100
Beverly, Massachusetts	U.S.	Enzyme manufacturing	Leased	44,000
Frederick, Maryland	U.S.	Manufacturing, warehousing, distribution, and development	Leased	42,000
Barcelona	Spain	Development, manufacturing, warehousing, distribution, and administration	Leased	31,900
Manila	Philippines	Business service center	Leased	29,300
Shanghai	China	Service Solutions and administration	Leased	28,400
Ann Arbor, Michigan	U.S.	Service Solutions, warehousing, and administration	Leased	28,000
Gdańsk	Poland	Enzyme manufacturing, development, warehousing, and administration	Leased	19,000
Germantown, Maryland	U.S.	Service Solutions and training center	Leased	13,500
Redwood City, California	U.S.	Bioinformatics	Leased	12,700

In 2022, we expanded manufacturing and logistic space at our site in Hilden, Germany, and invested in renewable heating systems and are planning further facility investments in 2023 in order to reduce our dependency on carbon energy sources and to reduce our carbon emission. At each of our owned facilities in Hilden, Germany, and Germantown, Maryland, there is room for future expansion of up to 300,000 square feet of facility space.

We believe our existing production and distribution facilities can support anticipated production needs for the next 36 months. Our production and manufacturing operations are subject to various federal, state, and local laws and regulations including environmental regulations. We do not believe we have any material issues relating to these laws and regulations.

Environmental Matters

We recognize climate change as one of the most pressing global challenges and acknowledge climate change risks such as extreme weather events and changes in regulation or customer behavior. Operations could, for example, be negatively impacted by volatility in the cost of raw materials, components, freight, and energy. New laws or regulations adopted in response to climate change could increase energy costs further, as well as the costs of certain raw materials, components, packaging, and transportation. Our customers are generally very conscious of environmental topics including plastic consumption and the recyclability and durability of products. These aspects influence their choice of supplier.

We have strengthened our dedication to shrinking our carbon footprint with a commitment to a science-based target of net-zero carbon emissions by 2050 in order to help limit global warming. Our ambition to reach net-zero by 2050 applies to our entire value chain and fulfills the criteria of the Science-Based Targets initiative (SBTi). The commitment calls for us, by 2030, to reduce Scope 1 and 2 emissions by at least 40% and Scope 3 emissions by at least 10% on the way to reaching net-zero carbon emissions, using 2020 as a baseline.

We have launched a series of additional ESG initiatives, and these have been recognized with a PRIME rating from ISS ESG and an A rating from MSCI ESG. For more information, please refer to the Sustainability page on our website at www.qiagen.com/sustainability.

Human Capital

The skills, knowledge, dedication and passion of our employees are critical for the success of QIAGEN. We want to recruit, support and retain the best employees, offering performance-based remuneration, development opportunities and measures to balance work and family life. We are committed to diversity in our teams, fueling innovation and engagement with our customers and business partners, and an environment and culture that allow all employees the equal opportunity for success. In a fast-changing, competitive business environment, QIAGEN has a significant commitment to being an employer of choice and further enhancing our position as a great place to work.

Recognizing that our employees are the key to our success, we seek to be a great place to work. In 2022, many of our subsidiaries have been recognized as an employer of choice including our subsidiaries in Germany and Poland, where we are recognized again as a "Top Employer" by the Top Employer Institute, a global authority on recognizing excellence in people practices. In 2022, we received the Top Employer Certificate for China, and our subsidiaries in the U.S., Brazil, Mexico, India, Hong Kong, and Taiwan were again recognized as a "Great Place to Work". Our subsidiary in the Philippines won multiple employer certifications in 2022, including Asia's "Great Place to Work" and Asia's "Best Employer Brand in 2022."

In 2022, we launched QIAflex, our hybrid work schedule for employees where remote work is possible due to their role. QIAflex provides employees the opportunity to work remote on up to two days per week, while also ensuring that employees have the opportunity to work together with their colleagues in person on at least two days per week. The new system is an outcome of the new working environment possibilities that emerged during the COVID-19 pandemic.

Diversity and Inclusion

We are committed to creating an environment that is rich in diversity and empowers all employees. Diverse teams strengthen our organization through the variety of ideas, perspectives and approaches they bring to our business. Our teams outperform and succeed when they are composed of individuals with the widest possible range of personalities, backgrounds and traits. That's why we value each person's uniqueness and maintain an environment where all individuals can succeed based on their strengths and characteristics. In 2022, our workforce was composed of at least 90 nationalities with an average age of 39.5 years old. With 50% women, we are well-balanced in terms of gender on an aggregate level. Our strategic initiative on gender diversity, which began in 2018, has yielded remarkable results in the past years, particularly with regard to leadership positions. The participation of women in management roles rose from just under 28% in 2018 to 35% in 2022 as a result of a series of initiatives to drive awareness, engagement, and development among our leadership team.

For 2023, we have a target goal to achieve a level of at least 36% women in management roles. For the second consecutive year, we have been named to the 2023 Bloomberg Gender Equality Index, which provides an opportunity for companies to assess progress towards parity, benchmark against peers and highlight a commitment to gender equality. Our commitment to diversity goes beyond cultural and gender diversity. Our U.S. subsidiary received a score of 100 on the Human Rights Campaign Foundation's 2022 Corporate Equality Index. QIAGEN is also a member of the Business Coalition for the Equality Act.

Employee Development

Employee development is viewed as integral to the success of creating lasting value for our customers, patients, colleagues, partners, and shareholders. We believe we offer opportunities to work on exciting tasks and projects in an engaging work environment. Employees join QIAGEN and stay with QIAGEN because they can see how their work makes a difference to people's lives everywhere in the world. We offer various training platforms that provide the possibility to either use our global e-learning portfolio or to participate in personal trainings usually offered in a blended format. The focus is on job-specific skills, compliance, competencies and leadership development.

Employee Compensation

We have been committed since our beginning to attract and retain the best talent worldwide via our focus on rewarding all employees for performance, both for QIAGEN as a whole as well as for their personal impact. Our compensation system fosters a focus on achieving corporate strategic initiatives as well as

personal accountability. We regularly benchmark our compensation strategy to evaluate the level and mix of compensation awarded by companies and industries for a broad range of positions around the world. Benchmark companies include many competitors, as well as other companies in the regions where we operate. QIAGEN has a “pay for performance” culture, with the compensation of employees linked to the achievement of both corporate and personal performance goals. The corporate goals are established by senior management as the result of bottom-up as well as top-down analysis and review against strategic objectives. These goals are set at "realistically ambitious" levels on an annual basis to motivate and drive performance, with a focus on both short-term and long-term quantifiable objectives. Furthermore, to align our compensation programs with the interests of shareholders, management levels receive a portion of their total compensation in the form of long-term compensation, which is granted as equity as a reward for performance.

For more information about our human capital, please refer to the Sustainability page on our website at www.qiagen.com/sustainability.

Item 4A. Unresolved Staff Comments

Not applicable.

Item 5. Operating and Financial Review and Prospects

This section contains a number of forward-looking statements. These statements are based on current management expectations, and actual results may differ materially. Among the factors that could cause actual results to differ from management’s expectations are those described in “Risk Factors” and “Note Regarding Forward-looking Statements and Risk Factors” in Item 3 of this Annual Report. The discussion that follows focuses on 2022 with comparisons to 2021. For discussion of the year ended December 31, 2021, compared to 2020, refer to Item 5 in our December 31, 2021 Annual Report on Form 20-F.

Operating Environment

Economic Environment

The global economy grew at approximately 3% in 2022, about half the rate seen in 2021 and among the weakest annual growth rates of the last 20 years. This economic growth was slower than anticipated as the world sought to emerge from the adverse impacts of the COVID-19 pandemic at the same time as a period of high inflation. Various central banks tightened their monetary policy conditions, primarily through higher interest rates, and prompted "cost of living" challenges for people around the world. After steadily climbing throughout 2021, the U.S. Dollar Index saw a solid start to 2022, experienced a significant drop mid-year and ended the year up approximately 7% compared to 2021.

Industry Environment

The global molecular diagnostics industry faced a period in 2022 of diverging trends—ongoing growth in areas of the industry that had been adversely affected by COVID-19 pandemic lockdowns in recent years, while also facing a significant drop-off in demand for COVID-19 testing and surveillance products compared to the peak level in 2021. The pandemic has led to significant growth in the installed base of instruments, with industry competitors now seeking to expand the utilization of this installed base to other applications for customers in the Life Sciences and Molecular Diagnostics. Although numerous smaller companies have emerged in recent years, larger companies such as QIAGEN have crucial global distribution and production capacity advantages, as well as brand recognition and credibility, with customers around the world.

The Life Sciences and Molecular Diagnostics industry segments are together estimated at more than $100 billion of annual sales, and are expected to maintain a healthy single-digit sales growth pace in the coming years. Key growth drivers include an ongoing high level of funding to advance our understanding of biology as well as medical demand for molecular clinical testing given the impact on improving outcomes for patients.

Operating Results

Overview

In 2022, QIAGEN achieved more than $2 billion of sales, delivering a strong underlying performance with solid sales growth in the non-COVID products while absorbing significantly lower sales in COVID-19 testing products over the prior year. Important contributions in the non-COVID products came from continued execution on goals for the Five Pillars of Growth, which involve various product groups in which QIAGEN has a top leadership position and / or significant growth potential. We maintained a high level of investments into research and development for menu expansion of our key platforms, while also resuming more commercialization activities with the end of lockdown measures in various countries. Cash flow trends were higher in 2022 over 2021, reflecting the strength of our business activities as the world moves increasingly into a post-pandemic environment.

Financial highlights of 2022 include:

- Net sales declined 5% to $2.14 billion in 2022 from $2.25 billion in 2021, reflecting an increase in non-COVID product groups sales that was more than offset by a drop in COVID-19 product sales. Results in 2022 were adversely impacted by about five percentage points from unfavorable currency movements against the U.S. dollar.
- The operating income margin in 2022 was 24.8% of sales compared to 28.0% in 2021, reflecting higher expenses as a percentage of sales that included the costs from recent consumables kit production capacity expansion projects, an ongoing high level of investments into Research and Development and a higher level of commercialization activities compared to 2021.
- Net cash provided by operating activities rose 12% to $715 million in 2022 from $639 million in 2021.

Year Ended December 31, 2022, Compared to 2021

Net Sales

(in millions)	2022		2021		
Product type	Net sales	% of net sales	Net sales	% of net sales	% change
Consumables and related revenues	$1,888.9	88 %	$1,986.3	88 %	-5 %
Instruments	252.6	12 %	265.3	12 %	-5 %
Net Sales	**$2,141.5**		**$2,251.7**		**-5%**
Customer class					
Molecular Diagnostics	$1,126.2	53 %	$1,143.7	51 %	-2 %
Life Sciences	1,015.3	47 %	1,108.0	49 %	-8 %
Net Sales	**$2,141.5**		**$2,251.7**		**-5%**

(in millions)	2022		2021		
Product group	Net sales	% of net sales	Net sales	% of net sales	% change
Sample technologies	$796.9	37 %	$850.6	38 %	-6 %
Diagnostic solutions	660.9	31 %	638.8	28 %	+3 %
PCR / Nucleic acid amplification	390.8	18 %	434.0	19 %	-10 %
Genomics / NGS	224.8	10 %	245.1	11 %	-8 %
Other	68.1	3 %	83.2	4 %	-18 %
Net Sales	**$2,141.5**		**$2,251.7**		**-5%**

Sample technologies involve the sale of consumables kits and instruments for use in gaining DNA, RNA and proteins from biological samples. Sales in this product group declined 6% in 2022 to $796.9 million, as underlying growth in non-COVID applications (particularly for DNA samples) was more than offset by the decline in COVID-19 product sales (involving RNA samples). Non-COVID product sales were supported by ongoing healthy demand amid increasing levels of lab work during 2022, and supported by instrument sales. Sales results for 2022 were adversely impacted by approximately five percentage points of currency movements over the prior year.

Diagnostic solutions involve the sale of regulated consumables kits and instruments for use in clinical healthcare, as well as revenues from our Precision Diagnostics portfolio and companion diagnostic co-development projects with pharmaceutical companies. Sales in this product group grew 3% to $660.9 million in 2022. The QuantiFERON-TB test for tuberculosis detection maintained a solid pace with 17% growth in 2022, reflecting the continued conversion of the latent TB market from the traditional skin test. QIAstat-DX sales rose and benefited from ongoing instrument placements along with higher consumables sales, in particular for the new Gastrointestinal panel in Europe. NeuMoDx sales exceeded the annual sales goal, supported by higher non-COVID testing utilization, but still declined over 2021 results. Sales in the rest of this product group declined, mainly due to lower sales of COVID-19 products.

PCR / Nucleic acid amplification involves consumables kits and instruments used in non-regulated applications. Sales in this product group fell 10% to $390.8 million due to a very significant decline in COVID-19 testing demand. The QIAcuity digital PCR system delivered solid growth in 2022 over 2021 results, supported by the launch of new assays for biopharma applications.

Genomics / NGS involves our portfolio of universal solutions for use on any next-generation sequencer (NGS) as well as the QIAGEN Digital Insights bioinformatics business and other products used in genomics analysis workflows. Sales in this product group declined 8% to $224.8 million, also on overall weaker demand for COVID-19 product groups.

Geographic region (in millions)	2022	2021	% change
Americas	$997.8	$1,007.4	-1 %
Europe, Middle East and Africa	733.5	814.4	-10 %
Asia Pacific, Japan and Rest of World	410.3	429.9	-5 %
Net Sales	**$2,141.5**	**$2,251.7**	**-5%**

The **Americas** region led the performance among our three regions, with overall results significantly affected by the decline in COVID-19 sales. Sales in the U.S. were largely unchanged compared to 2021, while sales rose in Canada against lower results in Brazil and Mexico over the prior year. Sales in this region were not affected by currency movements.

The **Europe, Middle East and Africa (EMEA)** region's results were also affected by the decline in COVID-19 sales, as well as 11 percentage points of unfavorable currency movements against the U.S. dollar. Among the top-performing countries in 2022 were Germany, France, Spain and the United Kingdom.

The **Asia Pacific, Japan and Rest of World** region saw an overall sales decline in 2022 over the prior year. Higher sales were seen in Australia, while sales at actual rates declined in Japan and China compared to 2021. Sales in this region were adversely impacted by seven percentage points from unfavorable currency movements against the U.S. dollar.

Gross Profit

(in millions)	2022	2021	% change
Gross Profit	$1,384.6	$1,450.8	-5%
Gross Margin	64.7%	64.4%	

The gross margin in 2022 was 64.7% of sales, and slightly higher than 64.4% in 2021 despite an adverse change in product mix due to higher sales of instruments compared to consumables kits. Generally, our consumables and related products have a higher gross margin than instruments and service arrangements, and changes in the sales levels of these products and services can result in fluctuations in gross margin between periods. Results for 2022 also absorbed higher costs related to labor (including a one-time inflation payment) as well as increased product and royalty payments compared to 2021.

The amortization expense on acquisition-related intangibles within cost of sales declined to $60.5 million in 2022 compared to $67.1 million in 2021. The lower amortization expense reflected the full amortization of certain assets.

Operating Expenses

	2022		2021		
(in millions)	Expenses	% of net sales	Expenses	% of net sales	% change
Research and development	$189.9	8.9 %	$190.0	8.4 %	0%
Sales and marketing	474.2	22.1 %	456.4	20.3 %	+4%
General and administrative	129.7	6.1 %	128.1	5.7 %	+1%
Acquisition-related intangible amortization	14.5	0.7 %	18.5	0.8 %	-22%
Restructuring, acquisition, integration and other, net	44.8	2.1 %	27.8	1.2 %	+15%
Total operating expenses	$853.1	39.8 %	$820.8	36.5 %	
Income from operations	$531.5	24.8 %	$630.1	28.0 %	

Research and Development

Research and development expenses were largely unchanged at $189.9 million in 2022 compared to 2021, but rose to 8.9% of sales from 8.4% in 2021. The majority of investments were made in our Five Pillars of Growth, including investments in menu expansion for the NeuMoDx, QIAstat-Dx and QIAcuity products, to support post-pandemic sales expansion. Results for 2022 included $16.4 million of favorable currency exchange movements. As we continue to discover, develop and acquire new products and technologies, we expect to incur additional expenses related to facilities, licenses and employees engaged in research and development. Overall, research and development costs are expected to increase as a result of seeking regulatory approvals, including U.S. FDA Pre-Market Approval (PMA), U.S. FDA 510(k) clearance and EU CE approval of certain assays or instruments. Further, business combinations, along with the acquisition of new technologies, may increase research and development costs in the future. We have a strong commitment to innovation and expect to continue to maintain a high level of investments into our research and development efforts.

Sales and Marketing

Sales and marketing expenses rose 4% to $474.2 million over 2021, and rose to 22.1% of sales from 20.3% in 2021. Among the factors for the higher expenses in 2022 were increased commercialization costs amid a resumption of activities following pandemic lockdowns in certain regions during 2021, as well as higher freight and other distribution expenses. Results for 2022 included $32.1 million of favorable currency exchange movements. Sales and marketing expenses are primarily associated with personnel, commissions, advertising, trade shows, publications, freight and logistics expenses, and other promotional expenses, including higher travel costs in 2022 compared to 2021. We continue to increase the use of digital customer engagement capabilities that were built up during the COVID-19 pandemic to enhance customer engagement with a focus on greater efficiency and effectiveness.

General and Administrative

General and administrative expenses increased 1% to $129.7 million in 2022, and also rose to 6.1% of sales compared to 5.7% in 2021. These results reflect efficiency gains across many administrative functions as well as investments into our information technology systems (including an upgrade of the SAP enterprise resource planning system) and into cybersecurity measures. Results for 2022 included $9.6 million of favorable currency exchange movements. We expect to maintain this level of spending in the coming years due to higher licensing and information technology costs as well as increased cybersecurity costs.

Acquisition-Related Intangible Amortization

Amortization expense on acquisition-related intangibles within operating expense declined 22% to $14.5 million from $18.5 million in 2021. The decrease reflects the full amortization of certain previously acquired assets. Amortization expense related to developed technology and patent and license rights acquired in business combinations are included in cost of sales. Amortization of trademarks and customer base acquired in business combinations are recorded in operating expense under the caption "acquisition-related intangible amortization." Amortization expenses of intangible assets not acquired in business combinations are recorded within cost of sales, research and development, or sales and marketing line items based on the use of the asset. Our acquisition-related intangible amortization recorded in operating expenses will increase in the event of future acquisitions.

Restructuring, Acquisition, Integration and Other, net

Restructuring, acquisition, integration and other, net expenses increased to $44.8 million in 2022, or 2.1% of sales, from $27.8 million, or 1.2% of sales, in 2021. Expenses in 2022 included costs related to our acquisitions of BLIRT S.A. and NeuMoDx, and our decision to suspend business in Russia and Belarus in 2022. Additionally, impairments to intangible assets during the year ended December 31, 2022 totaled $12.8 million, and included impairments related to Ellume, as further discussed in Note 11 "Goodwill and Intangible Assets". We also incurred $5.0 million of charges related to the 2022 restructuring program as discussed further in Note 6 "Restructuring".

For 2021, the expenses for the year included costs for the ongoing integration of NeuMoDx as well as $4.7 million as part of the outcome of a jury trial with ArcherDX in the U.S.

Other (Expense) Income, net

(in millions)	**2022**	2021	% change
Interest income	$32.8	$9.6	+243 %
Interest expense	(58.4)	(54.5)	+7 %
Other income, net	6.7	40.7	-83 %
Total other (expense) income, net	**($18.9)**	**($4.3)**	**+344%**

Interest income includes interest earned on cash, cash equivalents and short-term investments, income related to certain interest rate derivatives as discussed in Note 14 "Derivatives and Hedging" and other components including the interest portion of operating lease transactions. The increase in 2022 compared to the prior year was due to increasing interest rates and the duration and level of short-term investments held during the period.

Interest expense primarily relates to debt, as discussed in Note 16 "Debt" in the accompanying notes to consolidated financial statements. The increase in 2022 compared to 2021 reflects the issuance of German private placement bonds in July and August 2022 totaling €370.0 million.

Other income, net, for the year ended December 31, 2022, included $3.8 million of income from equity method investments and a gain of $2.7 million on foreign currency transactions.

Other income, net, for the year ended December 31, 2021, included a gain of $35.8 million recognized from the receipt and sale of shares in Invitae Corp. and related hedge, $12.0 million of income from equity method investments, $0.7 million of income, net, from the changes in fair value and the sale of investments held in other publicly traded companies, and a gain of $0.3 million from the sale of an equity method investment. These gains were partially offset by a loss of $9.0 million on foreign currency transactions.

Income Tax Expense

(in millions)	2022	2021	% change
Income before income taxes	$512.6	$625.8	-18%
Income tax expense	89.4	113.2	-21%
Net income	**$423.2**	**$512.6**	
Effective tax rate	17.4 %	18.1 %	

In 2022 our effective tax rate was 17.4% compared to 18.1% in 2021. The effective tax rates in both years reflected higher pre-tax book income due to an increased level of operating income in light of the strong sales growth. Our effective tax rates differ from the Netherlands statutory tax rate of 25.8% due in part to our operating subsidiaries being exposed to various effective tax around the world that range from zero to 35%. Fluctuations in the distribution of pre-tax income or loss among our operating subsidiaries can lead to fluctuations of the effective tax rate in the consolidated financial statements. We record partial tax exemptions on foreign income primarily derived from operations in Germany, the Netherlands and Singapore. These foreign tax benefits are due to a combination of favorable tax laws, rules and exemptions in these jurisdictions. These include intercompany foreign royalty income in Germany, which is statutorily exempt from trade tax. Further, we have intercompany financing arrangements in which the intercompany income is nontaxable in Dubai. See Note 17 "Income Taxes" to the consolidated financial statements for a full reconciliation of the Netherlands' statutory income tax rate to the effective tax rate.

In future periods, our effective tax rate may fluctuate due to similar or other factors as discussed in “Changes in tax laws or their application or the termination or reduction of certain government tax incentives, could adversely impact our overall effective tax rate, results of operations or financial flexibility” in Item 3 Risk Factors.

Foreign Currencies

The reporting currency of QIAGEN N.V. is the U.S. dollar. The functional currency of most of our subsidiaries are the local currencies of the countries in which they are headquartered. All amounts in the financial statements of entities whose functional currency is not the U.S. dollar are translated into U.S. dollar equivalents at exchange rates as follows: (1) assets and liabilities at period-end rates, (2) income statement accounts at average exchange rates for the period, and (3) components of equity at historical rates. Translation gains or losses are recorded in equity, and transaction gains and losses are reflected in net income.

Foreign currency transactions for the year ended December 31, 2022 resulted in a net gain of $2.7 million and net losses of $9.0 million and $4.1 million for the years ended December 31, 2021 and 2020, respectively. These amounts are included in other income, net.

As of April 1, 2022, the results of our subsidiary in Turkey are reported under highly inflationary accounting, as the prior three-years cumulative inflation rate exceeded 100%.

Derivatives and Hedging

In the ordinary course of business, we use derivative instruments, including swaps, forwards and / or options, to manage potential losses from foreign currency exposures and variable rate debt. The principal objective of such derivative instruments is to minimize the risks and / or costs associated with global financial and operating activities. We do not utilize derivative or other financial instruments for trading or speculative purposes. We recognize all derivatives as either assets or liabilities on the balance sheet, measure those instruments at fair value and recognize the change in fair value in earnings in the period of change, unless the derivative qualifies as an effective hedge that offsets certain exposures. In determining fair value, we consider both the counterparty credit risk and our own creditworthiness, to the extent that the derivatives are not covered by collateral agreements with the respective counterparties. To determine our own credit risk, we estimated our own credit rating by benchmarking the price of our outstanding debt to publicly-available comparable data from rated companies. Using the estimated rating, we quantify our credit risk by reference to publicly traded debt with a corresponding rating.

Foreign Currency Derivatives

As a globally active enterprise, we are subject to risks associated with fluctuations in foreign currencies in our ordinary operations. This includes foreign currency-denominated receivables, payables, debt and other balance sheet positions including intercompany items. We manage our balance sheet exposure on a group-wide basis using foreign exchange forwards, options and cross-currency swaps.

Interest Rate Derivatives

We use interest rate derivative contracts on certain borrowing transactions to hedge interest rate exposures. We have entered into interest rate swaps in which we agree to exchange, at specified intervals, the difference between fixed and floating interest amounts calculated by reference to an agreed-upon notional principal amount.

We also make use of economic hedges. Further details of our derivative and hedging activities can be found in Note 14 "Derivatives and Hedging" in the accompanying consolidated financial statements.

Liquidity and Capital Resources

To date, we have funded our business primarily through internally generated funds, debt, as well as private and public sales of equity. Our primary use of cash has been to strengthen our business operations, while our investing activities have focused on capital expenditure requirements and acquisitions.

(in millions)	**2022**	2021
Cash and cash equivalents	$730.7	$880.5
Short-term investments	687.6	184.8
Total cash and cash equivalents and short-term investments	**$1,418.3**	**$1,065.3**
Working capital	$1,419.4	$592.1

Cash and cash equivalents are primarily held in U.S. dollars and euros, other than those cash balances maintained in the local currency of subsidiaries to meet local working capital needs. At December 31, 2022, cash and cash equivalents had decreased by $149.8 million from December 31, 2021, primarily as a result of cash used in investing activities of $726.8 million and cash used in financing activities of $125.8 million, partially offset by cash provided by operating activities of $715.3 million as discussed in the Cash Flow Summary below. Short-term investments increased at December 31, 2022 to take advantage of higher commercial paper rates. The overall higher cash and cash equivalent balance supported the increase in working capital at December 31, 2022 together with a lower current portion of long-term debt following repayments made during the year.

Cash Flow Summary

(in millions)	**2022**	2021
Net cash provided by operating activities	$715.3	$639.0
Net cash used in investing activities	(726.8)	(202.4)
Net cash used in financing activities	(125.8)	(150.4)
Effect of exchange rate changes on cash and cash equivalents	(12.5)	(3.7)
Net (decrease) increase in cash and cash equivalents	**($149.8)**	**$282.5**

Operating Activities

For the year ended December 31, 2022, we generated net cash from operating activities of $715.3 million compared to $639.0 million in 2021, due to a reduced level of non-cash adjustments in 2022 over the prior year that more than offset a lower amount of net income than in 2021. Among the non-cash factors, depreciation and amortization declined to $208.4 from $214.9 million in 2021, while the amortization of debt discount and issuance costs was largely unchanged at $33.7 million. Cash flow impacts from net changes in operating assets and liabilities primarily reflect increased inventories to support

customer demand trends in light of global supply chain tensions. Given that we rely heavily on cash generated from our operating activities to fund our business, a decrease in demand for our products, longer collection cycles or significant technology advances by competitors could have a negative impact on our liquidity.

Investing Activities

Approximately $726.8 million of cash was used in investing activities in 2022 compared to $202.4 million in 2021. Investing activities during 2022 consisted principally of $1.4 billion for purchases of short-term investments, $129.2 million in cash paid for purchases of property and equipment, $63.7 million of net cash paid for the acquisition of BLIRT S.A. and $20.1 million paid for intangible assets. This was partially offset by cash inflows of $883.1 million from the redemption of short-term investments and $9.9 million returned to us from our derivative counterparties in connection with cash provided to them to collateralize our derivative liabilities with them as discussed in Note 14 "Derivatives and Hedging".

Cash used in investing activities during 2021 consisted principally of $397.7 million for purchases of short-term investments, $189.9 million for purchases of property, plant and equipment and $16.6 million paid for intangible assets. This was partially offset by cash inflows of $359.6 million from the redemption of short-term investments and $44.9 million returned to us from our derivative counterparties with cash provided to them to collateralize our derivative liabilities with them.

Financing Activities

For the year ended December 31, 2022, cash used in financing activities was $125.8 million compared to $150.4 million in 2021. Financing activities during 2022 included $480.0 million for the repayment of long-term debt, $25.4 million paid in connection with net share settlement for tax withholdings related to the vesting of stock awards and $4.6 million in cash paid for contingent consideration. This was partially offset by proceeds of $371.5 million from the issuance of long-term debt and $12.6 million received from our derivative counterparties to collateralize derivative assets that we hold with them.

In 2021, cash used in financing activities totaled $150.4 million and consisted primarily of net payments of $100.0 million for the repurchase of QIAGEN shares, repayment of $41.3 million of long-term debt, and $23.6 million paid in connection with net share settlement for tax withholdings related to the vesting of stock awards. This was partially offset by $8.6 million received from our derivative counterparties to collateralize derivative assets that we hold with them.

Other Factors Affecting Liquidity and Capital Resources

As of December 31, 2022, we carry $1.9 billion of long-term debt, of which $389.6 million is current and $1.5 billion is long-term.

In July and August 2022, we completed a German private placement bond (2022 Schuldschein), which was issued in various tranches totaling €370.0 million ($371.5 million) that have maturities through 2032 as described more fully in Note 16 "Debt". The interest rate is linked to our ESG performance. As of December 31, 2022, a total of $393.5 million is outstanding.

In December 2020, we issued $500.0 million aggregate principal amount of zero coupon Convertible Notes due in 2027 (2027 Notes). The 2027 Notes will mature on December 17, 2027, unless converted in accordance with their terms prior to such date as described more fully in Note 16 "Debt".

In November 2018, we issued $500.0 million aggregate principal amount of Cash Convertible Senior Notes due in 2024 (2024 Notes). Interest on the 2024 Notes is payable semiannually in arrears at a rate of 1.000% per annum. The 2024 Notes will mature on November 13, 2024, unless repurchased or converted in accordance with their terms prior to such date.

In September 2017, we issued $400.0 million aggregate principal amount of Cash Convertible Senior Notes due in 2023 (2023 Notes). Interest on the 2023 Notes is payable semiannually in arrears at a rate of 0.500% per annum. The 2023 Notes will mature on September 13, 2023, unless repurchased or converted in accordance with their terms prior to such date.

In 2017, we completed a German private placement (2017 Schuldschein) consisting of various tranches denominated in U.S. dollars or Euros at either floating or fixed rates, and have various maturities through June 2027. As of December 31, 2022, a total of $116.7 million was outstanding. During 2022, we repaid $153.0 million for the four tranches that matured. In 2021, we paid $41.1 million for two tranches that matured, as described in Note 16 "Debt".

In March 2014, we issued Cash Convertible Senior Notes, of which the remaining $0.2 million was paid during 2021.

In October 2012, we completed a U.S. private placement with three series at a weighted average interest rate of 3.66%. The remaining outstanding amount of $327.0 million was repaid in October 2022.

In December 2020, we obtained a €400 million syndicated revolving credit facility with a contractual life of three years, and with the ability to be extended twice by a one-year period. No amounts were utilized during 2022. The facility can be utilized in Euros and bears interest of 0.550% to 1.500% above EURIBOR, and is offered with interest periods of one, three or six months. The interest rate is linked to our ESG performance. We have additional credit lines totaling €27.0 million with no expiration date. None of these credit lines were utilized in 2022.

On July 12, 2021, we announced our seventh share repurchase program of up to $100 million of our common shares. During 2021, we repurchased 1.9 million QIAGEN shares for $100.0 million (including transaction costs). This program ended on October 29, 2021. In May 2019, we announced our sixth share repurchase program of up to $100 million of our common shares, and we repurchased 1.3 million QIAGEN shares during 2020 in this program for $64.0 million (including transaction costs) before it ended at the end of the year. Repurchased shares are held in treasury to satisfy various obligations, which include employee share-based remuneration plans.

We have lease obligations, including interest, in the aggregate amount of $100.9 million, of which $23.7 million was current as of December 31, 2022. We also have purchase obligations of $127.2 million and license commitments of $18.5 million. In connection with certain acquisitions that we have completed, QIAGEN could be required to make additional contingent cash payments of up to $20.7 million based on the achievement of certain revenue and operating results milestones. These obligations are further discussed in Note 12 "Leases" and Note 20 "Commitments and Contingencies" in the consolidated financial statements.

Liabilities associated with uncertain tax positions, including interest and penalties, were estimated at $83.0 million as of December 31, 2022. Ultimate settlement of these liabilities is dependent on factors outside of our control, such as examinations by each agency and expiration of statutes of limitation for assessment of additional taxes. Therefore, we cannot reasonably estimate when, if ever, this amount will be paid to a government agency.

We did not use special purpose entities and did not have any off-balance sheet financing arrangements during the years ended December 31, 2022, 2021 and 2020.

We expect that cash from financing activities will continue to be impacted by issuances of our common shares in connection with our equity compensation plans, and that the market performance of our shares will impact the timing and volume of the issuances. Additionally, we may make future acquisitions or investments requiring cash payments, the issuance of additional debt or equity financing.

We believe that funds from operations, existing cash and cash equivalents, together with the proceeds from any public and private sales of equity, and availability of financing facilities, would be sufficient to fund our planned operations and expansion in the coming year. However, any global economic downturn may have a greater impact on our business than currently expected, and we may experience a decrease in the sales of our products, which could impact our ability to generate cash. If our future cash flows from operations and other capital resources are not adequate to fund our liquidity needs, we may be required to obtain additional debt or equity financing or to reduce or delay our capital expenditures, acquisitions or research and development projects. If we could not obtain financing on a timely basis or at satisfactory terms, or implement timely reductions in our expenditures, our business could be adversely affected.

Dividend

QIAGEN has not paid a cash dividend since its inception and does not intend to pay any dividends in the foreseeable future. We intend to retain any earnings for the development of the business.

Credit Rating

QIAGEN currently does not have a rating issued by any credit rating agency.

Critical Accounting Policies, Judgments and Estimates

The preparation of our financial statements in accordance with accounting principles generally accepted in the United States requires management to make assumptions that affect the reported amounts of assets, liabilities and disclosure of contingencies as of the date of the financial statements, as well as the reported amounts of revenues and expenses during the reporting period. Critical accounting policies are those that require the most complex or subjective judgments often as a result of the need to make estimates about the effects of matters that are inherently uncertain. Thus, to the extent that actual events differ from management's estimates and assumptions, there could be a material impact to the financial statements. In applying our critical accounting policies, at times we used accounting estimates that either required us to make assumptions about matters that were highly uncertain at the time the estimate was made or it is reasonably likely that changes in the accounting estimate may occur from period to period that would have a material impact on the presentation of our results of operations, financial position or cash flows. Our critical accounting policies are those related to revenue recognition, income taxes, share-based compensation, investments, goodwill and other intangible assets, acquisitions and fair value measurements. We reviewed the development, selection, and disclosure of our critical accounting policies and estimates with the Audit Committee of our Supervisory Board.

Revenue Recognition

We recognize revenue when control of promised goods or services is transferred to customers in an amount that reflects the consideration that is expected to be received for those goods or services. Identifying performance obligations in a contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation requires management's judgments and estimates. Sales arrangements which require a measure of progress toward completion by measuring actual hours incurred to date as a proportion of the total budgeted hours of the project also involves management's judgments and estimates. While the majority of our sales agreements contain standard terms and conditions, we do enter into agreements that contain multiple products or services or non-standard terms and conditions. Sometimes it is difficult to determine whether there is more than one performance obligation under a sales agreement and if so, how and when revenue should be recognized is subject to certain estimates or assumptions. Should our judgments and estimates not be correct, revenue recognized for any reporting period could be adversely affected.

Income Taxes

Calculation of our tax provision is complex due to our international operations and the multiple taxing jurisdictions in which we operate. Some of our deferred tax assets relate to net operating losses (NOL). The utilization of NOLs is not assured and is dependent on generating sufficient taxable income in the future. Although management believes it is more likely than not that we will generate sufficient taxable income to utilize substantially all NOL carryforwards, evaluating the NOLs related to our newer subsidiaries requires us to make estimates that we believe are reasonable, but may also be highly uncertain given that we do not have direct experience with these subsidiaries or their products. Thus, the estimates may be subject to significant changes from period to period as we gain that experience. To the extent that our estimates of future taxable income are insufficient to utilize all available NOLs, a valuation allowance will be recorded in the provision for income taxes in the period the determination is made, and the deferred tax assets will be reduced by this amount, which could be material. In the event that actual circumstances differ from management's estimates, or to the extent that these estimates are adjusted in the future, any changes to the valuation allowance could materially impact our financial position and results of operations.

The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax laws and regulations in many jurisdictions across our global operations. ASC 740 states that a tax benefit from an uncertain tax position may be recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes on the basis of technical merits. We record unrecognized tax positions in accordance with ASC 740 and adjust these liabilities when our judgment changes as a result of the evaluation of new information not previously available. Because of the complexity of some of these uncertainties, the ultimate resolution may result in a payment that is materially different from our current estimate of the unrecognized tax liabilities. These differences will be reflected as increases or decreases to income tax expense in the period in which the new information is available.

Share-Based Compensation

Our stock plan, the QIAGEN N.V. 2014 Stock Plan (the Plan), allows for the granting of stock rights, incentive stock options, as well as for non-qualified options, stock grants and stock-based awards. We grant performance-based stock units subject to performance periods of three years. Thus, the estimates of performance achieved during the performance period may be subject to significant changes from period to period as the performance is completed. Any

increase or decrease in share-based compensation expense resulting from an adjustment in the estimated shares to be released is treated as a cumulative catch-up in the period of adjustment. If any of the assumptions or estimates used change significantly, share-based compensation expense may differ materially from what we have recorded in the current period.

Investments

Generally accepted accounting principles require different methods of accounting for an investment depending on the level of influence that we exert. Assessing the level of influence involves subjective judgments. If management's assumptions with respect to its level of influence differ in future periods and we therefore have to account for these investments under a method other than the cost method, it could have a material impact to our financial statements.

We have equity investments accounted for under the measurement alternative as these equity securities do not have readily determinable fair values and are not accounted for under the equity method. This measurement alternative requires these investments to be measured at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer. At each reporting date, we review each investment for impairment, considering factors such as book values from the most recent financial statements, and forecasts and expectations of the investee, and also for any observable price changes from stock transactions of the issuer. If an impairment is determined to have occurred, estimation of the fair value of these non-marketable equity investments is inherently subjective. Therefore, in the case of an impairment or an observable price change occurs, it could require a write-down or write-up of the investment that could materially impact our financial position and results of operations.

Additionally, we have made strategic investments in certain companies as more fully described in Note 10 "Investments" to the consolidated financial statements, some of which are variable interest entities. FASB ASC Topic 810 requires a company to consolidate a variable interest entity in which it holds a variable interest if it is designated as the primary beneficiary of that entity even if the company does not have a majority of voting interests. A variable interest entity is generally defined as an entity with insufficient equity to finance its activities or where the owners of the entity lack the risk and rewards of ownership. Assessing the requirements of ASC Topic 810 involves subjective judgments. If management's assumptions with respect to the criteria differ in future periods, and we therefore have to account for these investments under a different method, it could have a material impact on our financial statements.

Amortized Intangible Assets

We assess amortized intangible assets at least annually, as of October 1st of each year, for indications of impairment. Intangibles are assessed for recoverability considering the contract life, where applicable, and the period of time over which the intangible will contribute to future cash flow. The unamortized cost of intangible assets, where cash flows are independent and identifiable from other assets, is evaluated periodically and adjusted, if necessary, if events and circumstances indicate that a decline in value below the carrying amount has occurred. Due to the numerous variables associated with our judgments and assumptions and the effects of changes in circumstances affecting the valuation, both the precision and reliability of the resulting estimates are subject to uncertainty. As additional information becomes known, we may change our estimates.

Acquisitions

We frequently enter into business combinations and must determine whether an acquired entity is considered to be a business or an asset or group of assets under ASU 2017-01, *Business Combinations: Clarifying the Definition of a Business*. A portion of the purchase price can only be allocated to goodwill in a business combination. Transaction costs are expensed in a business combination yet capitalized in an asset acquisition. Contingent payments and in-process research and development costs are also handled differently. A set of assets is not a business if substantially all of the fair value of the acquired gross assets is concentrated in a single asset or group of similar identifiable assets. In determining whether an acquired entity is considered to be a business or a set of assets, application of the "substantially all" threshold requires judgment.

The purchase price allocation for acquisitions of a business requires extensive use of accounting estimates and judgments to allocate the purchase price to the identifiable tangible and intangible assets acquired, including in-process research and development, and liabilities assumed based on their respective fair values. An acquisition may include contingent consideration as part of the purchase price. Contingent consideration is accounted for at fair value at the acquisition date with subsequent changes to the fair value being recognized in earnings.

We have made several acquisitions of businesses in recent years. The purchase prices for the acquisitions were allocated to tangible and intangible assets acquired and liabilities assumed based on their estimated fair values at the acquisition dates. In most acquisitions, we engage an independent third-party valuation firm to assist us in determining the estimated fair values of acquired in-process research and development and identifiable intangible assets. Such a valuation requires significant estimates and assumptions, including but not limited to determining the timing and estimated costs to complete the in-process projects, projecting regulatory approvals, estimating projected revenue and related growth rates, estimating future cash flows, estimating customer attrition rates and developing appropriate discount rates. We believe the estimated fair values of contingent consideration and assets acquired and liabilities assumed are based on reasonable assumptions. However, the fair value estimates for the purchase price allocations may change during the allowable allocation period, which is up to one year from the acquisition dates, if additional information becomes available.

Fair Value Measurements

We have categorized our assets and liabilities that are measured at fair value, based on the priority of the inputs to the valuation techniques, in a three-level fair value hierarchy: Level 1 - using quoted prices in active markets for identical assets or liabilities; Level 2 - using observable inputs other than quoted prices; and Level 3 – using unobservable inputs. We primarily apply the market approach for recurring fair value measurements, maximize our use of observable inputs and minimize our use of unobservable inputs. We utilize the mid-point price between bid and ask prices for valuing the majority of our assets and liabilities measured and reported at fair value. In addition to using market data, we make assumptions in valuing assets and liabilities, including assumptions about risk and the risks inherent in the inputs to the valuation technique.

Certain of our derivative instruments, which are classified in Level 2 of the fair value hierarchy, are valued using industry-standard models that consider various inputs, including time value, volatility factors, and current market and contractual prices for the underlying instruments, as well as other relevant economic measures. Substantially all of these inputs are observable in the marketplace throughout the full term of the instrument, can be derived from observable data or are supported by observable prices at which transactions are executed in the marketplace.

Certain of our acquisitions involve contingent consideration, the payment of which is contingent on the occurrence of future events. Contingent consideration is classified in Level 3 of the fair value hierarchy and is initially recognized at fair value as a cost of the acquisition. After the acquisition, the contingent consideration liability is remeasured each reporting period. The fair value of contingent consideration is measured predominantly on unobservable inputs such as assumptions about the likelihood of achieving specified milestone criteria, projections of future financial performance, assumed discount rates and assumed weightings applied to potential scenarios in deriving a probability weighted fair value. Significant judgment is used in developing these estimates and assumptions both at the acquisition date and in subsequent periods. If actual events differ from management's estimates, or to the extent these estimates are adjusted in the future, our financial position or results of operations could be affected in the period of any change.

Additionally, our Level 3 instruments include non-marketable equity security investments. Under the measurement alternative, the carrying value is measured at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments of the same issuer. Adjustments are determined primarily based on a market approach as of the transaction date.

For other fair value measurements, we generally use an income approach to measure fair value when there is not a market observable price for an identical or similar asset or liability. This approach utilizes management’s best assumptions regarding expectations of projected cash flows, and discounts the expected cash flows using a commensurate risk-adjusted discount rate.

The above listing is not intended to be a comprehensive list of all our accounting policies. In many cases, the accounting treatment of a particular transaction is specifically dictated by generally accepted accounting principles in the United States, with limited or no need for management’s judgment. There are also areas in which management’s judgment in selecting available alternatives may or may not produce a materially different result. See our audited consolidated financial statements and notes thereto in Item 18 of this Annual Report, containing a description of accounting policies and other disclosures required by generally accepted accounting principles in the United States.

Recent Authoritative Pronouncements

For information on recent accounting pronouncements impacting our business see Note 2 "Effects of New Accounting Pronouncements" of the Notes to the consolidated financial statements included in Item 18.

Perspectives

Global Economic Perspectives for 2023

A number of international organizations point to mounting challenges facing the global economy in 2023, with projections for global growth to slow even more than in 2022. The International Monetary Fund (IMF), for example, projects growth to fall from 3.4% in 2022 to 2.9% in 2023, while The World Bank projects growth to fall from 2.9% in 2022 to just 1.7% in 2023, almost half the rate it had expected earlier in 2022. The dampened economic outlook reflects monetary policy actions to raise interest rates aimed at containing high inflation rates, while the world economies address worsening financial conditions and continued disruptions from Russia's invasion of Ukraine. The U.S., the Euro zone and China are all undergoing a period of pronounced economic weakness, and the resulting spillovers are exacerbating other headwinds faced by emerging market and developing economies (EMDEs). The recovery from the recessionary conditions created by the COVID-19 pandemic is far from complete, and investment to support growth in EMDEs is expected to remain below the average levels seen in the past two decades. Global prospects are also becoming increasingly imbalanced, with the major Asian emerging-market economies accounting for close to 75% of global GDP growth in 2023, reflecting their projected steady expansion against the anticipated slowdowns in the U.S. and Europe. Headline consumer price inflation rates in the major advanced economies are projected to moderate from about 6% in 2022 to approximately 4-5% in 2023, according to international organizations. However, the pace of this decline will vary across countries and is difficult to predict based on current conditions.

Industry Perspectives for 2023

After a period of significant growth due to the impact of the COVID-19 pandemic in recent years, the Life Science and Molecular Diagnostics industries are expected to face in 2023 a year of overall declining sales as the decline in demand for testing more than offsets underlying growth driven by sustained demand for molecular research and testing. Research markets largely resumed in 2022 the activities that were curtailed during the pandemic, while the use of molecular diagnostics in clinical healthcare has also returned to pre-pandemic levels. Against this backdrop, industry forecasts call for both of these markets to see sales growth at a mid-single-digit annual pace in the coming years. As innovation once again drives market expansion, QIAGEN intends to grow above this pace thanks to a strong product portfolio and global presence to capture opportunities in growing areas.

QIAGEN Perspectives for 2023

QIAGEN announced an outlook for 2023 (as of February 2023) with expectations for sales solid sales growth in the non-COVID product groups to continue from 2022, but for an ongoing significant decline in COVID-19 product group sales amid a sharp slowdown in demand for testing. The outlook for sales, which implies an overall decline from 2022, takes a prudent view on current macro trends and ongoing volatility in certain regions (e.g., China) while still expecting positive trends in a number of our end-markets. Currency movements against the U.S. Dollar are expected to have an overall neutral impact on a full-year basis, despite an adverse impact in the first half of the year. QIAGEN continues to implement its strategy based on "focus" and "balance." Focus involves our Five Pillars of Growth strategy to make significant investments in the commercialization and development of (1) Sample technologies, (2) QuantiFERON, (3) QIAcuity, (4) NeuMoDx and (5) QIAcuity. Balance involves developing our portfolio to address more than 500,000 customers across the Life Sciences and Molecular Diagnostics, as well as to build out our global presence in markets around the world offering growth potential. In terms of profitability, QIAGEN anticipates earnings per share (EPS) to be below the 2022 level as a result of the reduced sales outlook, as well as investments into the business to support mid-term growth prospects. The outlook provided by QIAGEN in February 2023 does not include any potential acquisitions that could be completed during the year.

Item 6. Directors, Senior Management and Employees

Directors and Senior Management

Managing Directors and Supervisory Directors are appointed annually for the period beginning on the date following the Annual General Meeting of our shareholders up to and including the date of the Annual General Meeting held in the following year.

The following is a brief summary of the background of each of the Managing Directors and Supervisory Directors for the year ended December 31, 2022 and their ages as of January 31, 2023. References to QIAGEN and the Company in relation to periods prior to April 29, 1996 mean QIAGEN GmbH and its consolidated subsidiaries.

Managing Directors

Thierry Bernard

Chief Executive Officer

Gender: Male

Thierry Bernard, 58, joined QIAGEN in February 2015 to lead the company's growing presence in molecular diagnostics, the application of Sample to Insight solutions for molecular testing in human healthcare. He was named Chief Executive Officer in March 2020 after serving in this role on an interim basis and became a member of the Managing Board in 2021. Previously, Mr. Bernard held roles of increasing responsibility during 15 years with bioMérieux SA, most recently as Corporate Vice President, Global Commercial Operations, Investor Relations and the Greater China Region, and held senior management roles in several other leading international companies. He has been a member of the Board of Directors of T2 Biosystems, Inc., a publicly listed company based in the U.S., since 2020. He is also a member of the AdvaMedDx Board of Directors, a U.S. industry trade association. Mr. Bernard has earned degrees and certifications from Sciences Po, LSE, the College of Europe, Harvard Business School, Centro de Comercio Exterior de Barcelona, and has been appointed Conseiller du Commerce Extérieur by the French government.

Roland Sackers

Chief Financial Officer

Gender: Male

Roland Sackers, 54, joined QIAGEN in 1999 as Vice President, Finance; became Chief Financial Officer in 2004, and joined the Managing Board in 2006. From 1995 to 1999, he was an auditor with Arthur Andersen Wirtschaftsprüfungsgesellschaft Steuerberatungsgesellschaft. Since 2019, Mr. Sackers has served on the Supervisory Board of Evotec SE, a publicly listed company based in Germany, becoming Chair of the Audit Committee in 2019 and Vice Chair of the Supervisory Board in 2021. He is also a member of the Board of the industry association BIO Deutschland. Mr. Sackers earned his Diplom-Kaufmann from the University of Münster.

Supervisory Directors

Lawrence A. Rosen

Committees: Audit, Nomination & ESG (Chair), Compensation & Human Resources

Gender: Male

Lawrence A. Rosen, 65, joined the Supervisory Board in 2013 and was appointed Chair in 2020. He is Chair of the Nomination & ESG Committee and a member of the Audit Committee and the Compensation & Human Resources Committee. Mr. Rosen also serves on the Supervisory Boards of Lanxess AG and Deutsche Post AG, where he previously was a member of the Board of Management and Chief Financial Officer from 2009 to 2016. He served as Chief Financial Officer of Fresenius Medical Care AG & Co. KGaA from 2003 to 2009, and earlier as Senior Vice President and Treasurer of Aventis SA in Strasbourg. A U.S. citizen, Mr. Rosen holds a bachelor's degree from the State University of New York and a master's in business from the University of Michigan.

Dr. Metin Colpan

Committees: Science & Technology (Chair), Nomination & ESG

Gender: Male

Metin Colpan Ph.D., 68, co-founded QIAGEN and served as its first Chief Executive Officer and a Managing Director from 1985 to 2003. A member of the Supervisory Board since 2004, Dr. Colpan is currently Chair of the Science & Technology Committee and a member of the Nomination & ESG Committee. Prior to co-founding QIAGEN, Dr. Colpan was an Assistant Investigator at the Institute for Biophysics at the University of Düsseldorf. He has extensive experience in sample technologies, in particular the separation and purification of nucleic acids, and has many patents in the field. Dr. Colpan obtained his doctorate and master's degree from the Darmstadt Institute of Technology.

Thomas Ebeling

Committee: Nomination & ESG

Gender: Male

Thomas Ebeling, 63, joined the Supervisory Board in 2021 and serves on the Nomination & ESG Committee. An advisor to various businesses, he previously served as Chief Executive Officer of ProSiebenSat.1 Media SE from 2009 to 2018. He worked for Novartis AG from 1997 to 2008, including as Chief Executive Officer of Novartis Pharmaceuticals and Chief Executive Officer of Novartis Consumer Health. He also has served on the Supervisory Boards of Bayer AG and Lonza Group AG. Mr. Ebeling has a degree in psychology from the University of Hamburg.

Dr. Toralf Haag

Committee: Audit (Chair and Financial Expert)

Gender: Male

Toralf Haag Ph.D., 56, joined the Supervisory Board in 2021 and currently serves as Chair of the Audit Committee. Dr. Haag is Chief Executive Officer and Chairman of the Corporate Board of Management of Voith GmbH & Co. KGaA, a privately held German technology company. Before joining Voith as Chief Financial Officer in 2016, Dr. Haag served for more than 11 years as Chief Financial Officer and Member of the Executive Committee of Lonza Group AG. Dr. Haag earned a degree in business administration from the University of Augsburg and a doctorate from the University of Kiel.

Prof. Dr. Ross L. Levine

Committee: Science & Technology

Gender: Male

Ross L. Levine M.D., 51, joined the Supervisory Board in 2016 and serves on the Science & Technology Committee. In 2021, he became Chair of QIAGEN's Scientific Advisory Board. A physician-scientist focused on researching and treating blood and bone-marrow cancers, Dr. Levine is the Laurence Joseph Dineen Chair in Leukemia Research, the Chief of Molecular Cancer Medicine and an Attending Physician at Memorial Sloan Kettering Cancer Center, and Professor of Medicine at Weill Cornell Medicine. Board-certified in internal medicine and hematology-oncology, Dr. Levine received a bachelor's degree from Harvard College and his M.D. from The Johns Hopkins University School of Medicine.

Prof. Dr. Elaine Mardis

Committees: Compensation & Human Resources, Science & Technology

Gender: Female

Elaine Mardis Ph.D., 60, joined the Supervisory Board in 2014 and serves on the Science & Technology Committee and the Compensation & Human Resources Committee. Dr. Mardis is Co-Executive Director of the Steve and Cindy Rasmussen Institute for Genomic Medicine at Nationwide Children's Hospital in Columbus, Ohio, and Professor of Pediatrics at The Ohio State University College of Medicine. Previously, she was the Robert E. and Louise F. Dunn Distinguished Professor of Medical Sciences at Washington University School of Medicine and President of the American Association for Cancer Research. Dr. Mardis is a scientific advisor to Scorpion Therapeutics LLC, an elected member of the U.S. National Academy of Medicine, and a member of the Board of Directors of Singular Genomics Systems, Inc., a publicly listed company based in the U.S. Dr. Mardis received her bachelor's degree and doctorate from the University of Oklahoma.

Dr. Eva Pisa

Committees: Compensation & Human Resources

Gender: Female

Eva Pisa Ph.D., 68, joined the Supervisory Board in 2022 and serves on the Compensation & Human Resources Committee. An advisor to several life science and diagnostic companies through her company piMed Consulting, she previously held senior leadership positions in Roche Diagnostics International from 2007 to 2020, most recently as Senior Vice President at Roche Centralized and POC Solutions. Prior to joining Roche, she was Chief Executive Officer of Sangtec Molecular Diagnostics AB, a Swedish start-up, from 2001 to 2007. Dr. Pisa holds a doctorate from the Karolinska Institutet and a master's in business from Heriot-Watt University.

Elizabeth E. Tallett

Committees: Audit, Compensation & Human Resources (Chair), Nomination & ESG

Gender: Female

Elizabeth E. Tallett, 73, joined the Supervisory Board in 2011. She is Chair of the Compensation & Human Resources Committee and a member of the Audit Committee and the Nomination & ESG Committee. Ms. Tallett is Chair of the Board of Directors of Elevance Health, Inc., and a member of the Board of Directors of Moderna, Inc., both publicly listed companies based in the U.S. From 2002 to 2015, she was a Principal of Hunter Partners, LLC, a management company for pharmaceutical, biotechnology and medical device companies, and continues to consult with early-stage healthcare companies. She previously served as President and Chief Executive Officer of Transcell Technologies Inc.; President of Centocor Pharmaceuticals; a member of the Parke-Davis Executive Committee, and Director of Worldwide Strategic Planning for Warner-Lambert Company. A founding Board member of the Biotechnology Council of New Jersey, Ms. Tallett received bachelor's degrees in mathematics and economics from the University of Nottingham.

Supervisory Board composition

The composition of our Supervisory Board is diverse in gender, nationality, background, knowledge and experience. Following best practice 2.1.10 of the Dutch Corporate Governance Code, the Supervisory Board establishes that its members are able to act critically and independently of one another on the Managing Board. To safeguard this, the Supervisory Board is composed in such a way that all its members are independent in the meaning of best practice 2.1.8 of the Dutch Corporate Governance Code. As a result, the Supervisory Board confirms being of the opinion that the independence requirements referred to in best practice 2.1.7 to 2.1.9 inclusive of the Dutch Corporate Governance Code have been fulfilled. The targeted profile of the Supervisory Board is reflected in its regulations, which are published on our website under "Supervisory Board."

The following table outlines the skills and experience of the current Supervisory Board members:

Key competencies	Lawrence A. Rosen (Chair)	Dr. Metin Colpan	Thomas Ebeling	Dr. Toralf Haag	Prof. Dr. Ross L. Levine	Prof. Dr. Elaine Mardis	Dr. Eva Pisa	Elizabeth E. Tallett
Required								
Integrity	•	•	•	•	•	•	•	•
Ethics	•	•	•	•	•	•	•	•
Health	•	•	•	•	•	•	•	•
English language skills	•	•	•	•	•	•	•	•
Experience	•	•	•	•	•	•	•	•
Recommended								
U.S. background	•				•	•		•
Entrepreneur		•	•		•		•	•
Corporate management multinational	•	•	•	•			•	•
Currently full-time employed / active				•	•	•		
Public reputation	•	•	•	•	•	•	•	•
Academic research		•			•	•		
Industrial research		•						
Diagnostics markets		•		•		•	•	
Capital markets	•	•	•	•				•
Financial management	•			•				•
M&A, business development	•	•	•	•			•	•
Commercial operations		•	•	•			•	•
Public management (e.g., universities)		•			•	•		
Regulatory / operations		•	•	•			•	•

Compensation of Managing Board Members and Supervisory Board Members

The updated Remuneration Policy for the Managing Board was approved by shareholders at the Annual General Meeting (AGM) on June 29, 2021, and came into force the day after the AGM. This policy complies with the Dutch law provisions implementing the Shareholders Rights Directive II (EU Directive 2017/828). Under Dutch law, the Supervisory Board will be required to submit a proposal to adopt a Remuneration Policy for the Managing Board no later than at the AGM to be held in 2025.

Managing Board Remuneration Policy

Remuneration of Managing Board members consists of a combination of base salary, short-term variable cash incentive (STI) tied to the achievement of annual Corporate Goals and Team Goals, and a long-term incentive (LTI) granted in share units that only vest after multiple years upon the achievement of predefined targets. In addition, Managing Board members can receive deferred compensation contributions and other benefits in line with market practices.

The Remuneration Policy complies with the best practices in Corporate Governance in the United States and Germany, where QIAGEN shares are listed on the New York Stock Exchange (NYSE) and the Frankfurt Stock Exchange, respectively. The inclusion of perspectives from the U.S. is particularly important given that this country is the domicile of many of our competitors, and for many members of our leadership and senior executive team, and also a country that represents about 40% of our annual sales.

The remuneration package for Managing Board members is designed to have a significant portion of total compensation in variable awards. The value of these awards can differ substantially from year to year depending on actual performance. Within the variable component, the incentives for short-term performance targets have a lower weight than those for long-term incentives, which are aimed at delivering sustainable value creation for our stakeholders, including shareholders.

A copy of the Remuneration Policy for the Managing Board can be found on QIAGEN's website (www.qiagen.com).

Managing Board Compensation for 2022

For the year ended December 31, 2022, the Managing Board members received the following compensation:

	Annual Compensation				Long-Term Compensation	
Managing Board Member	Fixed Salary	Variable Cash Bonus	Other [1]	Total	Benefit Plans	Performance Stock Units Granted
Thierry Bernard	$950,000	1,135,400	37,000	$2,122,400	$142,500	110,000
Roland Sackers	$556,500	617,000	40,000	$1,213,500	$114,000	71,000

[1] Amounts include, among others, car lease and reimbursed personal expenses such as tax consulting. We also occasionally reimburse our Managing Directors' personal expenses related to attending out-of-town meetings but not directly related to their attendance. Amounts do not include the reimbursement of certain expenses relating to travel incurred at the request of QIAGEN, other reimbursements or payments that in total did not exceed $10,000, or tax amounts paid by the Company to taxing authorities in order to avoid double-taxation under multi-tax jurisdiction employment agreements.

Supervisory Board Remuneration Policy

At the Annual General Meeting of Shareholders in 2021, an update to the Remuneration Policy for the Supervisory Board was adopted to harmonize the annual compensation granted to members of certain Board committees. This policy complies with the Dutch law provisions implementing the Shareholders Rights Directive II (EU Directive 2017/828). Under Dutch law, the Supervisory Board will be required to submit a proposal to adopt a Remuneration Policy for the Supervisory Board no later than at the Annual General Meeting to be held in 2024.

The objective of the Remuneration Policy for the Supervisory Board is to attract, retain, and motivate highly qualified Board members, taking into account QIAGEN's mission and vision, as well as strategic initiatives and opportunities to create value for stakeholders, including shareholders. It focuses on achieving a total remuneration level, both short-term and long term, that is comparable with levels provided by other European and U.S.-based companies.

This Policy supports the long-term development and strategy of QIAGEN in a highly dynamic environment, while aiming to address the requests of various stakeholders and maintaining an acceptable risk profile. It builds on remuneration principles and practices that have proven to be both fitting and effective for QIAGEN, especially as a Dutch incorporated company with global operations as well as stock market listings in the U.S. and Germany. The Supervisory Board ensures that the Policy and its implementation are linked to our objectives.

Supervisory Board Compensation for 2022

The Supervisory Board compensation for 2022 consists of fixed compensation and additional amounts for Chair and Vice Chair. Annual remuneration of the Supervisory Board members is as follows:

Fee payable to the Chair of the Supervisory Board	$150,000
Fee payable to each member of the Supervisory Board	$57,500
Additional compensation payable to members holding the following positions:	
Chair of the Audit Committee	$25,000
Member of the Audit Committee	$15,000
Chair of the (i) Compensation & Human Resources Committee, (ii) the Nomination & ESG Committee, or (iii) the Science & Technology Committee	$18,000
Member of the (i) Compensation & Human Resources Committee, (ii) the Nomination & ESG Committee, or (iii) the Science & Technology Committee	$11,000
Chair of other committees	$12,000
Member of other committees	$6,000

Further, Supervisory Board members will be reimbursed for tax consulting costs incurred in connection with the preparation of their tax returns up to an amount of €5,000 per person per year.

Supervisory Board members also receive a variable component, in the form of share-based compensation. We did not pay any agency or advisory service fees to members of the Supervisory Board in 2022.

The Supervisory Board held seven meetings in 2022. Of these meetings, five were held in person and two were held virtually. All Managing Board members were present for the Supervisory Board meetings in 2022. Members of senior management are regularly invited to these meetings to provide updates on topics within their area of expertise. This gives the Supervisory Board the opportunity to get acquainted with a variety of managers across QIAGEN, which the Supervisory Board considers very useful in connection with its talent management and succession planning activities.

The following table outlines the committee membership and meetings attended in 2022:

	Meeting Attendance				
	Supervisory Board	**Audit Committee**	**Compensation & Human Resources Committee**	**Nomination & ESG Committee**	**Science & Technology Committee**
Lawrence A. Rosen	7/7	6/7	4/4	5/5 (Chair)	
Dr. Metin Colpan	7/7			4/5	4/4 (Chair)
Thomas Ebeling	7/7			5/5	
Dr. Toralf Haag	7/7	7/7 (Chair)			
Dr. Ross L. Levine	7/7				4/4
Dr. Elaine Mardis	7/7		4/4		4/4
Dr. Eva Pisa[1]	4/4		2/2		
Elizabeth E. Tallett	7/7	7/7	4/4 (Chair)	5/5	

[1] Dr. Eva Pisa joined the Supervisory Board in June 2022.

The Supervisory Board meetings and the Supervisory Board committee meetings are held over a number of days, ensuring there is time for review and discussion. At each meeting, the Supervisory Board members discuss among themselves the goals and outcome of the meeting, as well as topics such as the functioning and composition of the Supervisory Board and the Managing Board.

In 2022, the Supervisory Board worked with an international consulting company to undertake an extensive benchmarking of the Supervisory Board, its composition and the way it operates. This assessment showed QIAGEN has ranking among the top five companies in the DAX-40 index in terms diversity and independence, range of experience, age and tenure, and the effectiveness of committee work and Board meetings. The benchmarking also included extensive interviews with each member of the Supervisory Board and Managing Board, as well as a joint session to review the outcomes.

For the year ended December 31, 2022, members of the Supervisory Board received the following compensation:

Supervisory Board Member	Fixed Remuneration	Committee Chair	Committee Membership	Total [1]	Restricted Stock Units
Lawrence A. Rosen	$150,000	18,000	26,000	$194,000	6,980
Dr. Metin Colpan	$57,500	18,000	11,000	$86,500	6,980
Thomas Ebeling	$57,500	—	11,000	$68,500	6,980
Dr. Toralf Haag	$57,500	25,000	—	$82,500	6,980
Dr. Ross L. Levine	$57,500	—	11,000	$68,500	6,980
Dr. Elaine Mardis	$57,500	—	22,000	$79,500	6,980
Dr. Eva Pisa[2]	$28,750	—	5,500	$34,250	—
Elizabeth E. Tallett	$57,500	18,000	26,000	$101,500	6,980

[1] Supervisory Board members are reimbursed for travel costs and for any value added tax to be paid on their remuneration. These reimbursements are excluded from the amounts presented herein.

[2] Dr. Eva Pisa joined the Supervisory Board in June 2022, and was not eligible for the equity grant for 2022.

Committees of the Supervisory Board

The Supervisory Board has established among its members the following four committees:

- Audit Committee;
- Compensation & Human Resources Committee;
- Nomination & ESG Committee; and
- Science & Technology Committee.

The Supervisory Board can establish other committees as deemed beneficial. Charters have been approved by the Supervisory Board under which each of the committees operates. These charters are published on our website at www.qiagen.com.

The committees were comprised of the following members in 2022:

Supervisory Board Member	Audit Committee	Compensation & Human Resources Committee	Nomination & ESG Committee	Science & Technology Committee
Lawrence A. Rosen	•	•	• (Chair)	
Dr. Metin Colpan			•	• (Chair)
Thomas Ebeling			•	
Dr. Toralf Haag	• (Chair)			
Dr. Ross L. Levine				•
Dr. Elaine Mardis		•		•
Dr. Eva Pisa		•		
Elizabeth E. Tallett	•	• (Chair)	•	

We believe that all of our Supervisory Board members meet the independence requirements set forth in the Dutch Corporate Governance Code (the Dutch Code). We further believe that all Supervisory Board members qualify as independent under the independence standards set forth in the New York Stock Exchange (NYSE) Listed Company Manual. Pursuant to the NYSE rules, a majority of the Supervisory Directors must qualify as independent, as defined in the Rules.

Audit Committee

The Audit Committee consists of three members appointed annually by the Supervisory Board for one-year terms and meets at least quarterly. We believe that all members of this Committee meet the independence requirements as set forth in Rule 10A-3 of the Securities Exchange Act of 1934, as amended, and the New York Stock Exchange Listed Company Manual. The Board has designated Dr. Haag as an "Audit Committee Financial Expert" as that term is defined in the U.S. Securities and Exchange Commission rules adopted pursuant to the Sarbanes-Oxley Act of 2002 and as referred to in the Dutch Decree on Audit Committees (*Besluit instelling* audit committee). The Committee performs a self-evaluation of its activities on an annual basis.

The Committee's primary duties and responsibilities include, among other things, to serve as an independent and objective party to monitor QIAGEN's accounting and financial reporting process, control and compliance systems and internal risk management, including cyber security. This Committee also is directly responsible for proposing the external auditor to the Supervisory Board, which then proposes the appointment of the external auditor to the Annual General Meeting. Further, this Committee is responsible for the compensation and oversight of QIAGEN's external auditor and for providing an open avenue of communication among the external auditor as well as the Managing Board and the Supervisory Board. Our Internal Audit department operates under the direct responsibility of the Audit Committee. Further, this Committee is responsible for establishing procedures to allow for the confidential and or anonymous submission by employees of concerns, including the receipt, retention and treatment of submissions received regarding accounting, internal accounting controls, or auditing matters.

The Audit Committee discusses, among other matters:

- our financial accounting and reporting principles and policies, and the adequacy of our internal accounting, financial and operating controls and procedures with the external auditor and management;
- considers and approves any recommendations regarding changes to our accounting policies and processes;
- reviews with management and the external auditor our quarterly earnings reports prior to their public release;
- reviews the quarterly and annual reports (reported on Forms 6-K and 20-F) to be furnished to or filed with the U.S. Securities and Exchange Commission and the Deutsche Boerse in Germany; and

- reviews major risk exposures (including cyber security), pre-approves related-party transactions between the Company and members of the Supervisory Board or Managing Board, and reviews any legal matter including compliance topics that could have a significant impact on the financial statements.

The Audit Committee met seven times in 2022 and also met with the external auditor excluding members of the Managing Board in November 2022.

Compensation & Human Resources Committee

The Compensation & Human Resources Committee consists of four members appointed annually by the Supervisory Board for one-year terms. Its primary duties and responsibilities include, among other things:

- preparation of a proposal to the Supervisory Board regarding the Remuneration Policy for the Managing Board and Supervisory Board and proposal for adoption by shareholders at the General Meeting;
- preparation of a proposal concerning the individual compensation for Managing Board members to be adopted by the Supervisory Board; and
- preparation of the Remuneration Report that outlines compensation for the Managing Board members and Supervisory Board members to be adopted by the Supervisory Board, and submitted to the Annual General Meeting for an advisory vote in accordance with Dutch law. The Remuneration Report outlines the implementation of the Remuneration Policies for the most recent year.

Additionally, the Compensation & Human Resources Committee is responsible for:

- review and approval of all equity-based compensation;
- review and approval of the annual salaries, bonuses and other benefits of the Executive Committee; and
- review of general policies relating to employee compensation and benefits.

This Committee engages external consultants to ensure that the overall remuneration levels are benchmarked regularly, against a selected group of companies and key markets in which QIAGEN operates. The Compensation & Human Resources Committee met four times in 2022.

Nomination & ESG Committee

The Nomination & ESG Committee consists of four members appointed by the Supervisory Board annually for one-year terms. Its primarily responsibilities include, among other things:

- preparing selection criteria and appointment procedures for members of the Supervisory Board and Managing Board; and
- conducting periodic evaluations of QIAGEN's ESG policies and related public disclosures.

Additionally, this Committee periodically evaluates the scope and composition of the Managing Board and the Supervisory Board, including the profile of the Supervisory Board as well as the functioning of individual members of Boards, and reporting these results to our Supervisory Board. It also proposes the (re-)appointment of members of the Managing Board and Supervisory Board, and supervises the policy of the Managing Board in relation to the selection and appointment criteria for senior management.

The Nomination & ESG committee met five times in 2022.

Science & Technology Committee

The Science & Technology Committee consists of three members appointed annually by the Supervisory Board for one-year terms. The Science & Technology Committee works with the Scientific Advisory Board which was established in 2021 to provide early evaluation of market and technology developments that could have an influence on QIAGEN's development and positioning in the Life Sciences and Molecular Diagnostics. The Committee's primary responsibilities include, among other things:

- reviewing and monitoring research and development projects, programs, budgets, infrastructure management; and
- overseeing the management risks related to our portfolio and information technology platforms.

The Science & Technology Committee provides understanding, clarification and validation of the fundamental technical basis of our businesses in order to enable the Supervisory Board to make informed, strategic business decisions and vote on related matters. Additionally, the Committee guides the Managing Board to ensure that QIAGEN can develop and leverage powerful, world-class science to create value for our stakeholders, including shareholders. The Science & Technology Committee met four times in 2022.

Share Ownership

The following table sets forth certain information as of January 31, 2023 concerning the ownership of Common Shares by members of the Managing Board and Supervisory Board. In preparing the following table, we have relied on information furnished by such persons.

	Shares Beneficially Owned [1]		
Name and Country of Residence	Number [2]		Percent Ownership
Thierry Bernard, United States	136,501	(3)	*
Roland Sackers, Germany	220,000	(4)	*
Dr. Metin Colpan, Germany	418,728	(5)	*
Thomas Ebeling, Germany	—		—
Dr. Toralf Haag, Germany	700		*
Dr. Ross L. Levine, United States	8,720	(6)	*
Dr. Elaine Mardis, United States	—	(7)	—
Dr. Eva Pisa, Switzerland	—		—
Lawrence A. Rosen, United States	5,504	(8)	*
Elizabeth Tallett, United States	40,097	(9)	*

* Indicates that the person beneficially owns less than 0.5% of the Common Shares issued and outstanding as of January 31, 2023.

[1] The number of Common Shares outstanding as of January 31, 2023 was 227,717,404. The persons named in the table have sole voting and investment power with respect to all shares shown as beneficially owned by them and have the same voting rights as shareholders with respect to Common Shares.

[2] Does not include Common Shares subject to options or awards held by such persons as of January 31, 2023. See footnotes below for information regarding stock awards that could become releasable within 60 days of the date of this table.

[3] Does not include 93,950 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table.

[4] Does not include 122,307 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table.

[5] Includes 357,893 shares held by CC Verwaltungs GmbH, of which Dr. Colpan is the sole stockholder. Does not include 9,690 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table.

[6] Does not include 9,690 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table.

[7] Does not include 9,690 shares issuable upon the release of unvested stock awards that could become released within 60 days from the date of this table.

[8] Does not include 9,690 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table.

[9] Does not include 9,690 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table.

Employees

The following tables provide information on the number of employees by geographical region and main category of activity as of December 31, 2022, 2021 and 2020:

	2022	2021	2020
Americas	1,370	1,384	1,328
Europe, Middle East & Africa	3,558	3,389	3,059
Asia Pacific, Japan and Rest of World	1,250	1,255	1,223
Total	**6,178**	**6,028**	**5,610**

	2022	2021	2020
Production	29 %	30 %	28 %
Research & Development	17 %	16 %	16 %
Sales	37 %	37 %	39 %
Marketing	6 %	6 %	6 %
Administration	11 %	11 %	11 %
Total	**100 %**	**100 %**	**100 %**

As a company headquartered in the European Union, freedom of association and collective bargaining are cornerstones of the good relationship between management and representatives of employees. A significant portion of workforce is employed in the Organization for Security and Co-Operation in Europe (OSCE) member states and in all regions where we operate, we comply with all applicable laws regarding freedom of association and collective bargaining and respect local laws and regulations concerning labor relations.

We strive to respect and promote human rights and our commitment on this issue can be found in our Human Rights Policy available on our website (www.qiagen.com). This policy is communicated to all employees globally on an ongoing basis via the company intranet and also given to newly hired employees. We strive to foster an open-door workplace culture where employees are able to approach management and/or Human Resources about their concerns without fear of retaliation. Our policy states that employees may communicate openly with management regarding their working conditions without threat of reprisal, intimidation or harassment.

Depending on local law and custom, there are different types of employment ranging from long-term fixed contracts to temporary positions, also including flexible time and programs for parents returning from childcare. In 2022, part-time employees represented 4.7% of our workforce and temporary employees with a fixed-term work contract represented 9.4%.

Management believes that its relations with regional labor unions and employees are good.

Stock Plans

We adopted the QIAGEN N.V. Amended and Restated 2005 Stock Plan (the 2005 Plan) which was approved by our shareholders on June 14, 2005. The 2005 Plan expired by its terms in April 2015 and no further awards will be granted under the 2005 Plan. On June 25, 2014, our shareholders approved the QIAGEN N.V. 2014 Stock Plan (the 2014 Plan), which replaced the 2005 Plan in April 2015. An aggregate of 16.7 million Common Shares were reserved for issuance pursuant to the 2014 Plan, subject to certain antidilution adjustments. We issue Treasury Shares to satisfy option exercises and award releases and had approximately 11.8 million Common Shares reserved and available for issuance under the 2005 and 2014 Plans at December 31, 2022.

Pursuant to the 2014 Plan, stock rights, which include options to purchase our Common Shares, stock grants and stock-based awards, may be granted to employees and consultants of QIAGEN and its subsidiaries and to Supervisory Directors. Options granted pursuant to the 2014 Plan may either be incentive stock options within the meaning of Section 422 of the United States Internal Revenue Code of 1986, as amended (the Code), or non-qualified stock options. Options granted to members of the Supervisory Board and the Managing Board must have an exercise price that is higher than the market price at the time of grant. Generally, the stock rights and incentive stock options, as well as non-qualified options, stock grants and stock-based awards have terms of up to five or ten years, subject to earlier termination in the event of death, disability or other termination of employment. The vesting and exercisability of certain stock rights will be accelerated in the event of a Change of Control, as defined in the agreements under the 2014 Plan.

The Plan is administered by the Compensation & Human Resources Committee of the Supervisory Board, which selects participants from among eligible employees, consultants and directors and determines the number of shares subject to the stock-based award, the length of time the award will remain outstanding, the manner and time of the award's vesting, the price per share subject to the award and other terms and conditions of the award consistent with the Plan. The Compensation & Human Resources Committee's decisions are subject to the approval of the Supervisory Board.

The Compensation & Human Resources Committee has the power, subject to Supervisory Board approval, to interpret the plans and to adopt such rules and regulations (including the adoption of "sub plans" applicable to participants in specified jurisdictions) as it may deem necessary or appropriate. The Compensation & Human Resources Committee or the Supervisory Board may at any time amend the plans in any respect, subject to Supervisory Board approval, and except that (i) no amendment that would adversely affect the rights of any participant under any option previously granted may be made without such participant's consent and (ii) no amendment shall be effective prior to shareholder approval to the extent such approval is required to ensure favorable tax treatment for incentive stock options or to ensure compliance with Rule 16b-3 under the United States Securities Exchange Act of 1934, as amended (the Exchange Act) at such times as any participants are subject to Section 16 of the Exchange Act.

As of January 31, 2023, there were 4.3 million stock unit awards outstanding as of January 31, 2023. These awards will be released between February 21, 2023 and May 31, 2028. As of January 31, 2023, 0.8 million stock unit awards were held by the officers and directors of QIAGEN, as a group.

Item 7. Major Shareholders and Related Party Transactions

Major Shareholders

The following table sets forth certain information concerning the ownership of Common Shares of each holder of greater than 5% ownership. None of these holders have any different voting rights than other holders of our Common Shares.

	Shares Beneficially Owned		
Name and Country of Residence	Number		Percent Ownership [1]
BlackRock, Inc., United States and United Kingdom	31,387,626	(2)	13.78 %
Massachusetts Financial Services Company, United States and Canada	20,855,701	(3)	9.16 %

[1] The percentage ownership was calculated based on 227,716,433 Common Shares outstanding as of December 31, 2022.

[2] Of the 31,387,626 shares attributed to BlackRock, Inc., it has sole voting power over 29,981,456 and sole dispositive power over all 31,387,626 shares. This information is based solely on the Schedule 13G filed by BlackRock, Inc. with the Securities and Exchange Commission on January 23, 2023, which reported ownership as of December 31, 2022.

[3] Of the 20,855,701 shares attributed to Massachusetts Financial Services Company, it has sole voting power over 17,487,819 and sole dispositive power over all 20,855,701 shares. This information is based solely on the Schedule 13G filed by Massachusetts Financial Services Company with the Securities and Exchange Commission on February 8, 2023, which reported ownership as of December 31, 2022.

Our common stock is traded on the New York Stock Exchange in the United States and on the Prime Standard Segment of the Frankfurt Stock Exchange in Germany. A significant portion of our shares are held electronically in the account of a stockbroker, therefore we generally have no way of determining who our shareholders are, their geographical location or how many shares a particular shareholder owns. As of January 31, 2023, there were 70 identified shareholders of record of our Common Shares, and represent only a small share of our overall shareholder base.

Control of Registrant

To our knowledge, we are not directly or indirectly owned or controlled by another corporation, by any foreign government, or by any other natural or legal person. As of January 31, 2023, the officers and directors of QIAGEN as a group beneficially owned 0.8 million Common Shares, or 0.4% of the then outstanding Common Shares.

Related Party Transactions

For information on related party transactions, see Note 24 "Related Party Transactions" of the Notes to Consolidated Financial Statements.

Item 8. Financial Information

See Item 18.

Legal Proceedings

For information on legal proceedings, see Note 20 "Commitments and Contingencies" of the Notes to Consolidated Financial Statements.

While no assurances can be given regarding the outcome of proceedings described in Note 20, based on information currently available, we believe that the resolution of these matters is unlikely to have a material adverse effect on our financial position or results of future operations for QIAGEN N.V. as a whole. However, because of the nature and inherent uncertainties of litigation, should the outcomes be unfavorable, certain aspects of our business, financial condition, and results of operations and cash flows could be materially adversely affected.

Statement of Policy on Dividend Distribution

We have not paid any dividends on our Common Shares since our inception and do not intend to pay any dividends on our Common Shares in the foreseeable future. We intend to retain our earnings, if any, for the development of our business.

Disclosure pursuant to Section 219 of the Iran Threat Reduction & Syria Human Rights Act (ITRA)

QIAGEN is a global leader in Sample to Insight solutions that transform biological samples into valuable molecular insights. QIAGEN GmbH, our subsidiary located in Hilden, Germany, has conducted limited business with certain Iranian and Syrian entities consisting of sales for our consumables and instrumentation products. In 2022, sales to Iran totaled $0.9 million, or approximately 0.04% of our consolidated net sales, and were primarily for consumables labelled for use in diagnostic testing for tuberculosis (QuantiFERON tests) and the detection of amniotic fluid (AmniSure ROM test). These transactions were processed through two distributors and under general license by the Office of Foreign Assets Control (OFAC) for Medicine and Medical Devices and in compliance with German and European Union customs regulations and do not include any products that are “dual-use” products or products requiring special clearance from the German customs authorities. There were no sales to Syria in 2022.

Although these activities are compliant with applicable law and not financially material, the Iran Threat Reduction and Syria Human Rights Act of 2012 (the Act) requires us to include the following disclosures in this Annual Report. U.S. affiliates, or foreign affiliates controlled by U.S. affiliates, are not involved in these sales activities and we have not knowingly conducted a transaction or dealt with a person or entity designated in U.S. Executive Orders No. 13224 and 13382. No business has been transacted with the Governments of Iran or Syria as defined in the Act. We do not believe any of our activities are sanctionable under the Iran Sanctions Act or the Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010.

In light of the nature of the products concerned, we do not currently anticipate any change in activities in Iran that would result in a material impact on QIAGEN. We do not have any employees in Iran or Syria.

Item 9. The Offer and Listing

Market Environment

Global stock markets suffered the worst year in 2022 since the 2008 financial crisis. A somewhat bullish initial outlook for the year was quickly reversed due to a number of factors in the early months of the year - in particular the geopolitical crisis created by Russia invading Ukraine. The shock effects led to inflation reaching 40-year highs, and prompting central banks around the world to quickly tighten monetary policy by raising interest rates from a long period of historically low levels. All three major U.S. indices ended 2022 with losses, marking the first year of an annual decline in several years. The Dow Jones Industrial Average fared best, closing down 8.8%. The S&P 500 dropped 19.4% and the Nasdaq 100 Index fell 33.0%. Among the indices in which QIAGEN is a member in Germany, the blue-chip DAX-40 Index declined 12.3%, while the TecDAX Index of the country's top technology companies closed down 25.5% on the year.

Global shares listed in the U.S. and Europe

QIAGEN's global shares have been registered and traded in the United States since 1996 and are currently traded on the New York Stock Exchange (NYSE). The global shares have also traded in Germany on the Frankfurt Stock Exchange since 1997, and the Prime Standard segment since its launch in 2003. The dual listing of global shares on NYSE and the Frankfurt exchange offers advantages for QIAGEN, our shareholders and employees, enhancing liquidity, and increasing the potential market opportunity to attract investors, particularly those in the U.S. that can only invest in U.S. dollar-denominated investments. Unlike American Depositary Receipts (ADRs), QIAGEN's global shares provide equal rights for all shareholders and can be traded on either exchange, in U.S. dollars or euros.

Share Price and Liquidity

QIAGEN's share price fared much better than the declines seen in market indices in the U.S. and Germany, decreasing 10.3% in U.S. dollars to $49.87 on the NYSE and declining 4.0% in euros to EUR 47.01 on the Frankfurt Stock Exchange (XETRA) in 2022. Our shares continued to offer high liquidity, with average daily trading volume of approximately 1.4 million in 2022 (about 0.9 million on the NYSE and other U.S. trading venues, and about 0.5 million on the Frankfurt Stock Exchange (XETRA) and other German exchanges). QIAGEN continued its commitment to disciplined capital allocation and shareholder returns. As of December 31, 2022, the free float, which affects weighting of QIAGEN shares in various indices, was approximately 99%.

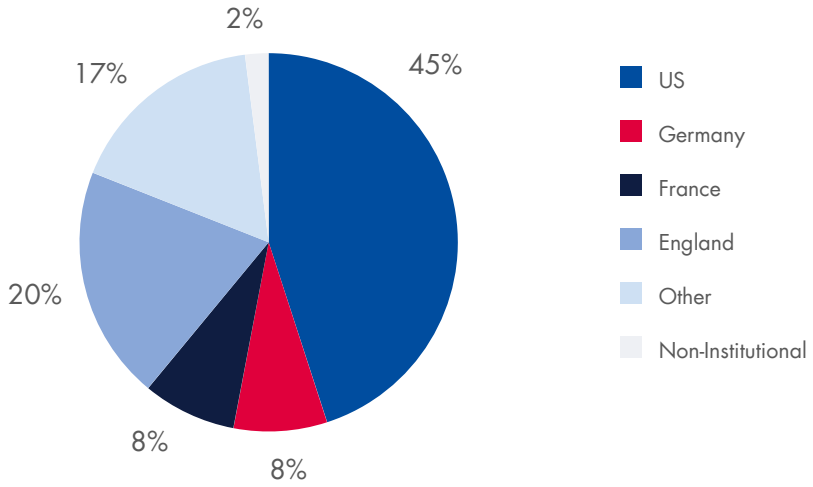
Shareholder Structure

QIAGEN has a global investor base comprised of more than 500 identified institutional investors, with about 47% in North America, about 48% in Europe and the remaining shares held in the rest of the world. Members of the Managing Board and the Supervisory Board, in total, owned less than 1% of QIAGEN's outstanding common shares at the end of 2022.

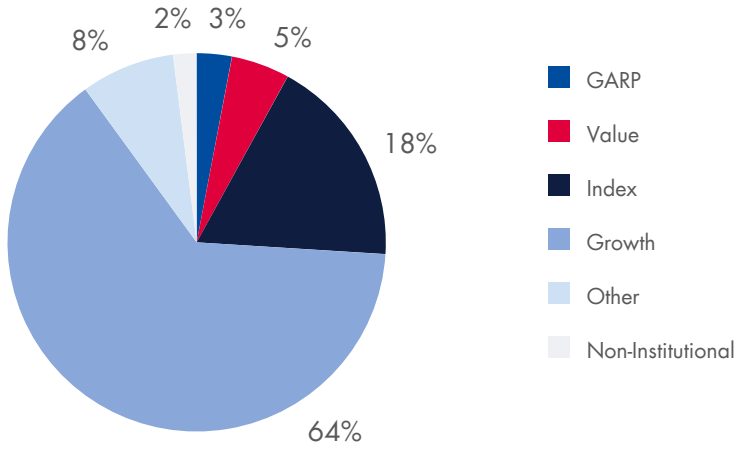
Key Share Data

	2022
Year-end market capitalization (in $ million)	11,356
Year-end market capitalization (in € million)	10,705

2022 Shareholder Structure by Geography



2022 Shareholder Structure by Investor Type



Annual Shareholder Meeting

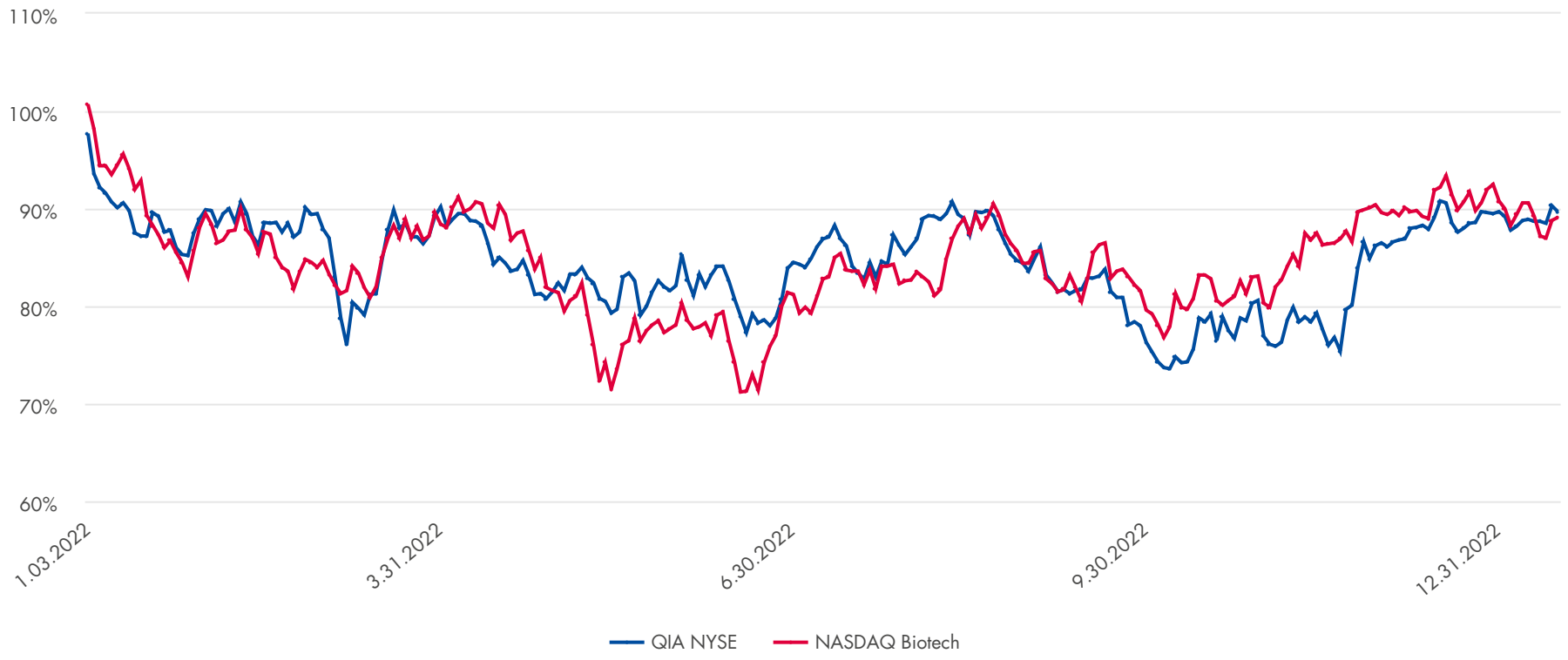
At the Annual General Meeting on June 23, 2022, in Venlo, the Netherlands, shareholders voted on a number of annually recurring items as well as the Remuneration Policy of the Managing Board. Many of the annually recurring items were approved with majorities above 95% of the shares represented at the meeting. Shareholders present or represented at the meeting held approximately 170.4 million shares, or 73.8% of QIAGEN's approximately 230.8 million issued shares as of the record date for the meeting. Details of attendance and voting results are available at corporate.QIAGEN.com.

Investor Relations and Engagement with Shareholders

QIAGEN is committed to offering shareholders, analysts and communities around the world transparent, comprehensive and readily accessible information on our performance, strategy and future prospects, as well as our vision and mission. Due to the COVID-19 pandemic, most discussions with investors and other members of the financial community were held virtually during the first half of 2022, but an increasing share of meetings were held in person during the second half of the year. These interactions included individual calls, roadshows and attendance at broker-sponsored investor conferences.

QIAGEN Share Price Development and Average Trading Volume - NYSE 2022

	2022
Year-end price	$49.87
High	$55.12
Low	$40.38
Average daily trading volume (in million shares)	0.91



QIAGEN Share Indices and Historic Prices - U.S. NYSE

As of January 10, 2018, our Common Shares began trading on the New York Stock Exchange (NYSE) under the symbol QGEN. Prior to that, from July 3, 2006, until January 9, 2018, our Common Shares were traded on the NASDAQ Global Select Market under the symbol QGEN. Previously, since February 15, 2005, our Common Shares had been quoted on the NASDAQ National Market under the symbol QGEN. Prior to that, since June 27, 1996, our Common Shares had been quoted on the NASDAQ National Market under the symbol QGENF.

The following tables set forth the annual high and low sale prices for the last five years, the quarterly high and low sale prices for the last two years, and the monthly high and low sale prices for the last six months of our Common Shares on the NYSE and NASDAQ Global Select, as applicable.

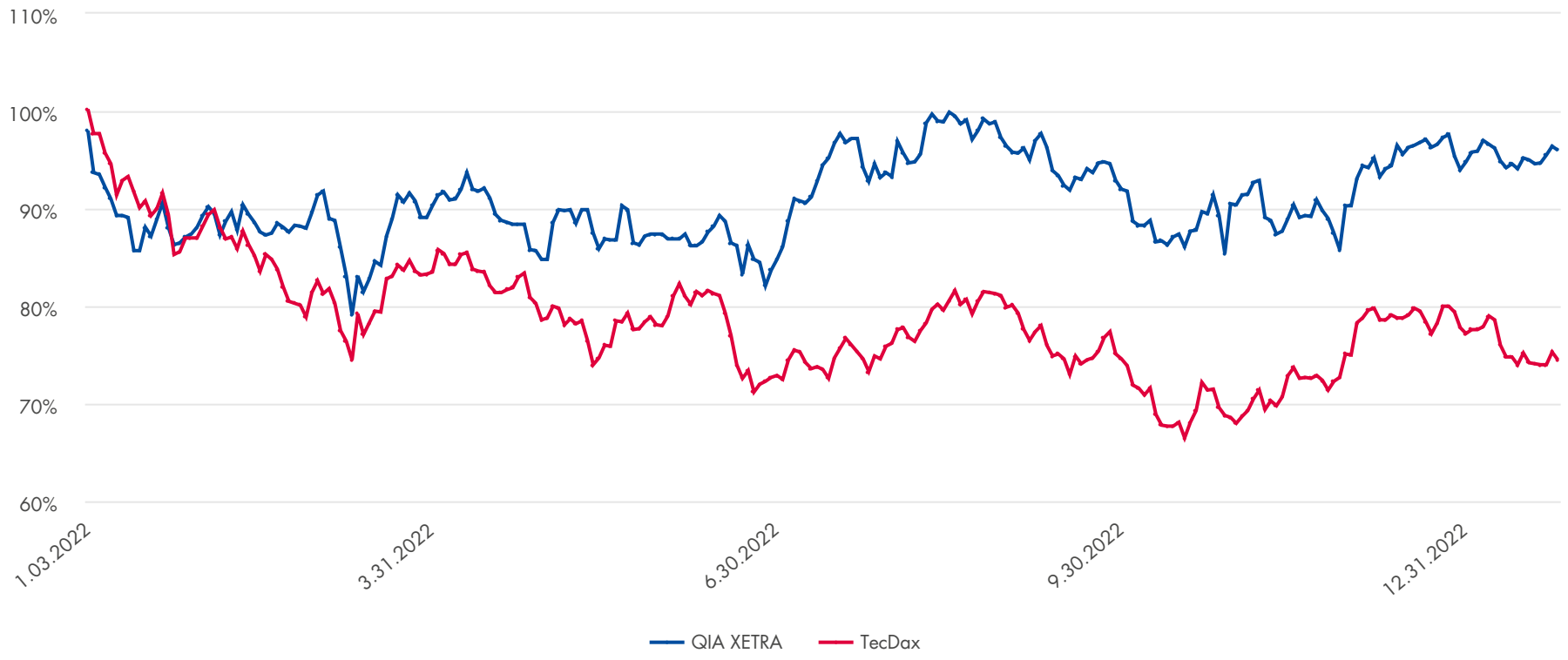
	High ($)	Low ($)
Annual:		
2018	39.45	30.78
2019	43.16	25.04
2020	55.27	32.97
2021	59.00	45.58
2022	55.12	40.38

	High ($)	Low ($)
Quarterly 2021:		
First Quarter	59.00	45.72
Second Quarter	52.83	45.58
Third Quarter	56.91	45.95
Fourth Quarter	58.00	50.08
Quarterly 2022:		
First Quarter	55.12	41.32
Second Quarter	50.38	42.44
Third Quarter	50.51	40.49
Fourth Quarter	51.05	40.38
Quarterly 2023:		
First Quarter (through March 9)	51.18	45.08

	High ($)	Low ($)
Monthly:		
October 2022	46.00	40.38
November 2022	49.77	41.78
December 2022	51.05	48.15
January 2023	51.18	48.42
February 2023	50.78	45.66
March 2023 (through March 9)	46.89	45.08

QIAGEN Share Price Development and Average Trading Volume - Germany Frankfurt Stock Exchange (XETRA) 2022

	2022
Year-end price	€47.01
High	€49.37
Low	€37.95
Average daily trading volume (in million shares)	0.54



QIAGEN Share Indices and Historic Prices - Germany

From September 25, 1997, to December 31, 2002, our Common Shares were traded on the Frankfurt Stock Exchange Neuer Markt under the symbol QIA and with the security code number 901626. As of January 1, 2003, the trading of our Common Shares was transferred to the Prime Standard Segment of the Frankfurt Stock Exchange. QIAGEN is a member of DAX effective September 20, 2021, due to a reorganization of German stock market indices. Prior to that, QIAGEN was a member of the MDAX since September 24, 2018. This reorganization in September 2021 included expansion of the DAX index from 30 to the 40 largest companies in Germany based on market capitalization.

The following table sets forth the annual high and low sale prices for the last five years, the quarterly high and low sale prices for the last two years, and the monthly high and low sale prices for the last six months of our Common Shares on the Prime Standard.

	High (EUR)	Low (EUR)
Annual:		
2018	34.05	25.22
2019	39.19	22.54
2020	46.95	29.55
2021	51.56	37.38
2022	49.37	37.95

	High (EUR)	Low (EUR)
Quarterly 2021:		
First Quarter	46.45	38.84
Second Quarter	44.02	37.38
Third Quarter	48.05	38.73
Fourth Quarter	51.56	43.06
Quarterly 2022:		
First Quarter	49.34	37.95
Second Quarter	46.03	39.94
Third Quarter	49.37	41.32
Fourth Quarter	48.26	41.62
Quarterly 2023:		
First Quarter (through March 9)	48.36	42.46

	High (EUR)	Low (EUR)
Monthly:		
October 2022	46.05	41.62
November 2022	47.77	41.83
December 2022	48.26	45.55
January 2023	48.36	44.60
February 2023	47.72	43.38
March 2023 (through March 9)	44.33	42.46

Item 10. Additional Information

Memorandum and Articles of Association

We are a public company with limited liability (naamloze vennootschap) incorporated under Dutch law and registered with the Dutch Trade Register under file number 12036979. Set forth below is a summary of certain provisions of our Articles of Association, as lastly amended on July 8, 2021 (the Articles), and Dutch law, where appropriate. The below also contains information on provisions of the Dutch Corporate Governance Code, (the Dutch Code 2016), which contains principles of good corporate governance and best practice provisions that regulate relations between the Managing Board, the Supervisory Board and the Shareholders. The principles and provisions are aimed at defining responsibilities for long-term value creation, risk control, effective management and supervision, remuneration and the relationship with Shareholders, including the General Meeting, and other stakeholders. A listed company should either

comply, or if not, explain in its management report why and to what extent it does not comply, with the principles of the Dutch Code. The Dutch Code has been taken into account in the summary below.

This summary does not purport to be complete and is qualified in its entirety by reference to the Articles, Dutch Law and the Dutch Code.

Corporate Purpose

Our objectives include, without limitation, the performance of activities in the biotechnology industry, as well as incorporating, acquiring, participating in, financing, managing and having any other interest in companies or enterprises of any nature, raising and lending funds and such other acts as may be conducive to our business.

Managing Directors

QIAGEN shall be managed by a Managing Board consisting of one or more Managing Directors under the supervision of the Supervisory Board. The Managing Board is responsible for our continuity and our affiliated enterprise. The Managing Board focuses on our long-term value creation and our affiliated enterprise, and takes into account our stakeholders' interests that are relevant in this context, which include but are not limited to our shareholders. Managing Directors shall be appointed by the General Meeting upon the joint meeting of the Supervisory Board and the Managing Board (Joint Meeting), having made a binding nomination for each vacancy. However, the General Meeting may at all times overrule the binding nature of such a nomination by a resolution adopted by at least a two-thirds majority of the votes cast, if such majority represents more than half the issued share capital. This is different from the provisions of many American corporate statutes, including the Delaware General Corporation Law, which give the directors of a corporation greater authority in choosing the executive officers of a corporation. Under our Articles, the General Meeting may suspend or dismiss a Managing Director at any time by a resolution adopted by at least a two-thirds majority of the votes cast, if such majority represents more than half of the issued share capital, or by a simple majority of votes cast without any quorum requirements required to be satisfied, if the suspension or dismissal is proposed by the Joint Meeting. The Supervisory Board shall also at all times be entitled to suspend (but not to dismiss) a Managing Director. The Articles provide that the Supervisory Board may adopt management board rules governing the internal organization of the Managing Board.

Furthermore, the Supervisory Board shall determine the salary, the bonus, if any, and the other compensation terms and conditions of service of the Managing Directors within the scope of the remuneration policy. The current remuneration policy of the Managing Board was adopted in our Annual General Meeting on June 29, 2021.

Resolutions of the Managing Board shall be validly adopted, if adopted by simple majority of votes, at least one of whom voting in favor of the proposal must be the Chairman. Each Managing Director has the right to cast one vote.

Under Dutch law, in the event that there is a conflict of interest between a Managing Director and us and our business on a certain matter, that Managing Director shall not participate in the discussions and voting on that matter. If all Managing Directors have a conflict of interest, such resolution shall be adopted by the Supervisory Board. If all Supervisory Directors have a conflict of interest as well, the General Meeting will be authorized to resolve on the matter. According to the Dutch Code, any conflict of interest or apparent conflict of interest between the company and Managing Directors should be prevented. To avoid conflicts of interest, adequate measures should be taken. Under the Dutch Code, the Supervisory Board is responsible for the decision-making on dealing with conflicts of interest regarding Managing Directors, Supervisory Directors and majority shareholders in relation to us. A Managing Director should report any potential conflict of interest in a transaction that is of material significance to the Company and/or to such Managing Director to the Chairman of the Supervisory Board and to the other members of the Managing Board without delay. The Supervisory Board should decide, outside the presence of the Managing Director, whether there is a conflict of interest. All transactions in which there are conflicts of interest with Managing Directors shall be agreed on terms that are customary in the sector concerned. Decisions to enter into transactions under which a Supervisory Director would have a conflict of interest that are of material significance to QIAGEN and/or to the Managing Director concerned, require the approval of the Supervisory Board. All transactions in which there are conflicts of interest with Managing Directors shall be agreed on terms that are customary in the sector concerned. Decisions to enter into transactions under which a Supervisory Director would have a conflict of interest that are of material significance to QIAGEN and/or to the Managing Director concerned, require the approval of the Supervisory Board.

Supervisory Directors

The Supervisory Board shall be responsible for supervising the policy pursued by the Managing Board and our general course of affairs. Under our Articles, the Supervisory Directors are required to serve the interests of our Company and our business and the interest of all stakeholders (which includes but is not limited to our shareholders) in fulfilling their duties. The Supervisory Board shall consist of such number of members as the Joint Meeting may from time to time determine, with a minimum of three members. The Supervisory Directors shall be appointed by the General Meeting upon the Joint Meeting having made a binding nomination for each vacancy. However, the General Meeting may at all times overrule the binding nature of such a nomination by a resolution adopted by at least a two-thirds majority of the votes cast, if such majority represents more than half the issued share capital. If during a financial year a vacancy occurs in the Supervisory Board, the Supervisory Board may appoint a Supervisory Director who will cease to hold office at the next Annual General Meeting, provided that the number of Supervisory Directors that may be appointed in this manner is limited to one-third of the number of Supervisory Directors determined by the Joint Meeting. Under our Articles, the General Meeting may suspend or dismiss a Supervisory Director at any time by a resolution adopted by at least a two-thirds majority of the votes cast, if such majority represents more than half of the issued share capital, or by a simple majority of votes cast without any quorum requirements required to be satisfied, if the suspension or dismissal is proposed by the Joint Meeting. This is different from the provisions of many American corporate statutes, including the Delaware General Corporation Law, which provides that directors may vote to fill vacancies on the board of directors of a corporation.

Under Dutch law, in the event that there is a conflict of interest between a Supervisory Director and us and our business on a certain matter, that Supervisory Director shall not participate in the discussions and voting on that matter. Under the Dutch Code, a Supervisory Director should report any conflict of interest or potential conflict of interest in a transaction that is of material significance to the Company and/or to such Supervisory Director to the Chairman of the Supervisory Board without delay. The Supervisory Board should decide, outside the presence of the Supervisory Director concerned, whether there is a conflict of interest. If all Supervisory Directors have a conflict of interest, the relevant resolution shall be adopted by the General Meeting. All transactions in which there are conflicts of interest with Supervisory Directors shall be agreed on terms that are customary in the sector concerned. Decisions to enter into transactions under which a Supervisory Director would have a conflict of interest that are of material significance to QIAGEN and/or to the Supervisory Director concerned, require the approval of the Supervisory Board.

In accordance with Dutch law and the Dutch Code, the General Meeting determines the compensation of the Supervisory Directors upon the proposal of the Compensation Committee with due observance of the remuneration policy for Supervisory Directors as adopted at the 2021 Annual General Meeting. Under the Dutch Code, any shares held by a Supervisory Director in the Company on whose board he or she sits should be long-term investments.

Liability of Managing Directors and Supervisory Directors

Under Dutch law, as a general rule, Managing Directors and Supervisory Directors are not liable for obligations we incur. Under certain circumstances, however, they may become liable, either towards QIAGEN (internal liability) or to others (external liability), although some exceptions are described below.

Liability towards QIAGEN

Failure of a Managing Director or Supervisory Director to perform his or her duties does not automatically lead to liability. Liability is only incurred in the case of a clear, indisputable shortcoming about which no reasonably judging business-person would have any doubt. In addition, the Managing Director or Supervisory Director must be deemed to have been grossly negligent. Managing Directors are jointly and severally liable for failure of the Managing Board as a whole, but an individual Managing Director will not be held liable if he or she is determined not to have been responsible for the mismanagement and has not been negligent in preventing its consequences. Supervisory Directors are jointly and severally liable for failure of the Supervisory Board as a whole, but an individual Supervisory Director will not be held liable if he or she is determined not to have been responsible for the mismanagement and has not been negligent in preventing its consequences.

Liability for Misrepresentation in Annual Accounts

Managing Directors and Supervisory Directors are also jointly and severally liable to any third party for damages suffered as a result of misrepresentation in the annual accounts, management commentary or interim statements of QIAGEN, although a Managing Director or Supervisory Director will not be held liable if

found not to be personally responsible for the misrepresentation. Moreover, a Managing Director or Supervisory Director may be found to be criminally liable if he or she deliberately publishes false annual accounts or deliberately allows the publication of such false annual accounts.

Tort Liability

Under Dutch law, there can be liability if one has committed a tort (*onrechtmatige daad*) against another person. Although there is no clear definition of "tort" under Dutch law, breach of a duty of care towards a third party is generally considered to be a tort. Therefore, a Dutch corporation may be held liable by any third party under the general rule of Dutch laws regarding tort claims. In exceptional cases, Managing Directors and Supervisory Directors have been found liable on the basis of tort under Dutch common law, but it is generally difficult to hold a Managing Director or Supervisory Director personally liable for a tort claim. Shareholders cannot base a tort claim on any losses which derive from and coincide with losses we suffered. In such cases, only we can sue the Managing Directors or Supervisory Directors.

Criminal Liability

Under Dutch law, if a legal entity has committed a criminal offense, criminal proceedings may be instituted against the legal entity itself as well as against those who gave order to or were in charge of the forbidden act. As a general rule, it is held that a Managing Director is only criminally liable if he or she played a reasonably active role in the criminal act.

Indemnification

Article 27 of our Articles provides that we shall indemnify every person who is or was a Managing Director or Supervisory Director against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement with respect to any threatened pending or completed action, suit or proceeding as well as against expenses (including attorneys' fees) actually and reasonably incurred in connection with the defense or settlement of an action or proceeding, if such person acted in good faith and in a manner he or she reasonably could believe to be in or not opposed to our best interests. An exception is made in respect to any claim, issue or matter as to which such person shall have been adjudged to be liable for gross negligence or willful misconduct in the performance of his or her duty to us.

Classes of Shares

The authorized classes of our shares consist of Common Shares, Financing Preference Shares and Preference Shares. No Financing Preference Shares or Preference Shares have been issued.

Common Shares

Common Shares are issued in registered form only. No share certificates are issued for Common Shares and Common Shares are registered in either our shareholders register with American Stock Transfer & Trust Company, our transfer agent and registrar in New York, or our shareholder register with TMF Fund Services B.V., Westblaak 89, 3012 KG Rotterdam, the Netherlands.

The transfer of registered shares requires a written instrument of transfer and the written acknowledgment of such transfer by us or the New York Transfer Agent (in our name).

Financing Preference Shares

No Financing Preference Shares are currently issued or outstanding. If issued, Financing Preference Shares will be issued in registered form only. No share certificates are issued for Financing Preference Shares. Financing Preference Shares must be fully paid up upon issue. The preferred dividend rights attached to Financing Preference Shares are described under "Dividends" below. We have no present plans to issue any Financing Preference Shares.

Preference Shares

No Preference Shares are currently issued or outstanding. If issued, Preference Shares will be issued in registered form only. No share certificates shall be issued for Preference Shares. Only 25% of the nominal value thereof is required to be paid upon subscription for Preference Shares. The obligatory payable part of the nominal amount (or the call) must be equal for each Preference Share. The Managing Board may, subject to the approval of the Supervisory Board,

resolve on which day and up to which amount a further call must be paid on Preference Shares which have not yet been paid up in full. The preferred dividend rights attached to Preference Shares are described under "Dividends" below.

Pursuant to our Articles, QIAGEN's Supervisory Board is entitled, if and in so far as the Supervisory Board has been designated by our General Meeting, to resolve to issue Preference Shares in the event that (i) any person who alone or with one or more other persons, directly or indirectly, have acquired or given notice of an intent to acquire (beneficial) ownership of an equity stake which in aggregate equals 20% or more of our share capital then outstanding, or (ii) the Supervisory Board has determined a person to be an "adverse person". For this purpose, an "adverse person" is generally any (legal) person, alone or together with affiliates or associates, with an equity stake in our Company which the Supervisory Board considers to be substantial, which must be at least 10% of the issued share capital, and where the Supervisory Board is of the opinion that this (legal) person has engaged in an acquisition that is intended to cause or pressure QIAGEN to enter into transactions intended to provide such person with short-term financial gain under circumstances that would not be in the interest of QIAGEN and our shareholders or whose ownership is reasonably likely to cause a material adverse impact on our business prospects. Currently the Supervisory Board has not been designated to issue Preference Shares.

On August 2, 2004, we entered into an agreement (Option Agreement) with Stichting Preferente Aandelen QIAGEN (SPAQ) which was most recently amended on June 4, 2012. Pursuant to the Option Agreement, SPAQ was granted an option to acquire such number of Preference Shares as are equal to the total number of all outstanding Common Shares minus one in our share capital at the time of the relevant exercise of the right. SPAQ may exercise its right to acquire the Preference Shares in all situations that it believes that our interest or our stakeholders' interests are at risk (which situations include but are not limited to (i) receipt of a notification from the Managing Board that a takeover is imminent, and (ii) receipt of a notification from the Managing Board that one or more activist shareholders take a position that is not in the interest of QIAGEN, our shareholders or our other stakeholders), provided that the conditions mentioned in the previous paragraph have been met. Due to the implementation of the EC Directive on Takeover Bids in Dutch legislation, the exercise of the option to acquire Preference Shares by SPAQ and the subsequent issuance of Preference Shares to SPAQ needs to be done with due observance and in consideration of the restrictions imposed by the Public Offer Rules.

SPAQ was incorporated on August 2, 2004. Its principal office is located at Hulsterweg 82, 5912 PL Venlo, The Netherlands. Its statutory objectives are to protect our interests and our enterprise and the enterprises of companies which are linked to us. SPAQ shall attempt to accomplish its objectives by way of acquiring Preference Shares in the share capital of QIAGEN and to exercise the voting rights in our interests and the interests of our stakeholders.

The board of SPAQ shall consist of at least two directors. Upon incorporation of SPAQ, two members were appointed to the board of SPAQ who resigned in 2019. In December 2019, two new members were appointed. Additional board members shall be appointed by the board of SPAQ. Board resolutions will be adopted by unanimity of the votes cast. SPAQ will be represented either by its board or by the chairman of its board.

Pre-emptive Rights

Under our Articles, existing holders of Common Shares will have pre-emptive rights in respect of future issuances of Common Shares in proportion to the number of Common Shares held by them, unless limited or excluded as described below. Holders of Common Shares shall not have pre-emptive rights in respect of future issuances of Financing Preference Shares or Preference Shares. Holders of Financing Preference Shares and Preference Shares shall not have pre-emptive rights in respect of any future issuances of share capital. Pre-emptive rights do not apply with respect to shares issued against contributions other than in cash or shares issued to employees of the Company or one of our group companies. Under our Articles, the Supervisory Board has the power to limit or exclude any pre-emptive rights to which shareholders may be entitled, provided that it has been authorized by the General Meeting to do so. The authority of the Supervisory Board to limit or exclude pre-emptive rights can only be exercised if at that time the Supervisory Board's authority to issue shares is in full force and effect. The authority to limit or exclude pre-emptive rights may be extended in the same manner as the authority to issue shares. If there is no designation of the Supervisory Board to limit or exclude pre-emptive rights in force, the General Meeting shall have authority to limit or exclude such pre-emptive rights, but only upon the proposal of the Supervisory Board.

Resolutions of the General Meeting (i) to limit or exclude pre-emptive rights or (ii) to designate the Supervisory Board as the corporate body that has authority to limit or exclude pre-emptive rights, require a majority of at least two-thirds of the votes cast in a meeting of shareholders if less than 50% of the issued share

capital is present or represented. For these purposes, issuances of shares include the granting of rights to subscribe for shares, such as options and warrants, but not the issue of shares upon exercise of such rights.

On June 23, 2022, the General Meeting resolved to authorize the Supervisory Board until December 23, 2023, to issue Common Shares and Financing Preference Shares or grant rights to subscribe for such shares, the aggregate par value of which shall be equal to the aggregate par value of 50% of the shares issued and outstanding in the capital of the Company as of December 31, 2021, as included in the Annual Accounts for Calendar Year 2021.

The General Meeting subsequently resolved to grant the authority to restrict or exclude pre-emptive rights until December 23, 2023. However, the General Meeting has limited this authority in a way that the Supervisory Board can only exclude or limit the pre-emptive rights in relation to (i) no more than 10% of the aggregate par value of all shares issued and outstanding in the capital of the Company as of December 31, 2021.

Acquisition of Our Own Shares

We may acquire our own shares, subject to certain provisions of Dutch law and our Articles, if (i) shareholders' equity less the payment required to make the acquisition does not fall below the sum of paid-up and called-up capital and any reserves required by Dutch law or the Articles, and (ii) we and our subsidiaries would not thereafter hold shares with an aggregate nominal value exceeding half of our issued share capital. Shares that we hold in our own capital or shares held by one of our subsidiaries may not be voted. The Managing Board, subject to the approval of the Supervisory Board, may effect the acquisition of shares in our own capital. Our acquisitions of shares in our own capital may only take place if the General Meeting has granted to the Managing Board the authority to effect such acquisitions. Such authority may apply for a maximum period of eighteen months and must specify the number of shares that may be acquired, the manner in which shares may be acquired and the price limits within which shares may be acquired. Dutch corporate law allows for the authorization of the Managing Board to purchase a number of shares equal to up to 50% of the Company's issued share capital on the date of the acquisition. On June 23, 2022, the General Meeting resolved to extend the authorization of the Managing Board in such manner that the Managing Board may cause us to acquire shares in our own share capital, for an 18-month period beginning June 23, 2022, until December 23, 2023, without limitation at a price between one euro cent (euro 0.01) and one hundred ten percent (110%) of the higher of the average closing price of our shares on the New York Stock Exchange or, as applicable, the Frankfurt Stock Exchange, for the five trading days prior to the day of purchase, or, with respect to Preference and Finance Preference shares, against a price between one euro cent (euro 0.01) and three times the issuance price and in accordance with applicable provisions of Dutch law and our Articles.

Synthetic Share Repurchase

During the Annual General Meeting held on June 23, 2022, the General Meeting approved a proposal to allow the Managing Board, subject to the approval of the Supervisory Board, to adjust the Company's capital structure and to repay capital to our shareholders via a synthetic share repurchase within predetermined boundaries.

To date, this proposal has not been implemented. If a decision is made to take such action, the key consequences of the synthetic share repurchase will be that: (i) an amount to be determined by the Managing Board, subject to the approval of the Supervisory Board, an amount of up to a maximum $300 million will be paid to our shareholders as a capital repayment, and (ii) the number of outstanding Common Shares will at least be decreased by a number of Common Shares approximately equal to the number of Common Shares that the Company, theoretically, could have repurchased for the aggregate amount repaid to our shareholders.

The Managing Board has full discretionary power not to, or, subject to the approval of the Supervisory Board, to implement the synthetic share repurchase. Furthermore, if the synthetic share repurchase were to be implemented, the Managing Board, with the approval of the Supervisory Board, will have the full discretionary power to determine when the synthetic share repurchase will be implemented and what the record date and the payment date(s) will be, provided that the proposed amendments to our Articles cannot be effected after 18 months from the date of the Annual General Meeting held in 2022 (i.e., until December 23, 2023).

For more information on the synthetic share repurchase, we refer to the explanatory notes to agenda item 14 in the proxy statement relating to the Annual General Meeting of June 23, 2022.

Capital Reduction

Subject to the provisions of Dutch law and our Articles, the General Meeting may, upon the proposal of the Supervisory Board, resolve to reduce the issued share capital by (i) canceling shares, or (ii) reducing the nominal value of shares through an amendment of our Articles. Cancellation with repayment of shares or partial repayment on shares or release from the obligation to pay up may also be made or given exclusively with respect to Common Shares, Financing Preference Shares or Preference Shares.

Cancellation of Fractional Common Shares

Currently, the Company holds fractional Common Shares, and as part of the potential synthetic share repurchase described above, if implemented, the Company may acquire additional fractional Common Shares. In an effort to, as much as possible, clean up the composition of the Company's share capital, the General Meeting resolved to reduce the issued share capital of the Company by cancelling all fractional Common Shares (i) the Company holds in its own capital at the date of the 2022 Annual General Meeting, and (ii) the Company will hold in its own capital as a result of the synthetic share repurchase described above, if implemented, and the execution of certain steps making-whole the then issued and outstanding fractional Common Shares. The cancellation may be implemented in one or more tranches, at the discretion of the Managing Board.

Financial Year, Annual Accounts and Independent Registered Public Accounting Firm

Our financial year coincides with the calendar year. Dutch law requires that within four months after the end of the financial year, the Managing Board must make available a report with respect to such financial year, including our financial statements for such year prepared under International Financial Reporting Standards and accompanied by a report of an Independent Registered Public Accounting Firm. The annual report is submitted to the Annual General Meeting for adoption.

The General Meeting appoints the external auditor of our statutory financial statements prepared in accordance with International Financial Reporting Standards and to issue a report thereon. On June 23, 2022, our shareholders appointed KPMG Accountants N.V. to serve as our external auditor for our statutory consolidated financial statements prepared in accordance with International Financial Reporting Standards for the year ending December 31, 2022.

Dividends and Other Distributions

Subject to certain exceptions, dividends may only be paid out of profits as shown in our annual financial statements as adopted by the General Meeting. Distributions may not be made if the distribution would reduce shareholders' equity below the sum of the paid-up capital and called-up and any reserves required by Dutch law or our Articles.

Out of profits, dividends must first be paid on any outstanding Preference Shares (the Preference Share Dividend) in a percentage (the Preference Share Dividend Percentage) of the obligatory call amount paid up on such shares at the beginning of the financial year in respect of which the distribution is made. The Preference Share Dividend Percentage is equal to the average main refinancing rates during the financial year for which the distribution is made. Average main refinancing rate shall be understood to mean the average value on each individual day during the financial year for which the distribution is made of the main refinancing rates prevailing on such day. The main refinancing rate shall be understood to mean the rate of the Main Refinancing Operation as determined and published from time to time by the European Central Bank. If and to the extent that profits are not sufficient to pay the Preference Share Dividend in full, the deficit shall be paid out of the reserves, with the exception of any reserve, which was formed as share premium reserve upon the issue of Financing Preference Shares. If in any financial year the profit is not sufficient to make the distributions referred to above and if no distribution or only a partial distribution is made from the reserves referred to above, such that the deficit is not fully made good, no further distributions will be made as described below until the deficit has been made good.

Out of profits remaining after payment of any dividends on Preference Shares, the Supervisory Board shall determine such amounts as shall be kept in reserve as determined by the Supervisory Board. Out of any remaining profits not allocated to reserve, a dividend (the Financing Preference Share Dividend) shall be paid on the Financing Preference Shares equal to a percentage (the Financing Preference Share Dividend Percentage) over the nominal value of the Financing Preference Shares, increased by the amount of share premium that was paid upon the first issue of Financing Preference Shares. The Financing Preference Shares Dividend Percentage which percentage is related to a fixed average effective yield on the prime interest rate on corporate loans in the United States as quoted in the Wall Street Journal as set forth in article 40.4 of our Articles. If and to the extent that the profits are not sufficient to pay the Financing Preference

Share Dividend in full, the deficit may be paid out of the reserves if the Managing Board so decides with the approval of the Supervisory Board, with the exception of the reserve which was formed as share premium upon the issue of Financing Preference Shares.

Insofar as the profits have not been distributed or allocated to reserves as specified above, the General Meeting may act to allocate such profits, provided that no further dividends will be distributed on the Preference Shares or the Financing Preference Shares.

The Managing Board may, with due observance of Article 2:105 of the Dutch Civil Code and with the approval of the Supervisory Board, distribute an interim dividend, if and to the extent that the profits so permit. Interim dividends may be distributed on one class of shares only.

The General Meeting may resolve, on the proposal of the Supervisory Board, to distribute dividends or reserves, wholly or partially, in the form of shares.

Distributions as described above are payable as from a date to be determined by the Supervisory Board. Distributions will be made payable at an address or addresses in the Netherlands to be determined by the Supervisory Board, as well as at least one address in each country where the shares are listed or quoted for trading. The Supervisory Board may determine the method of payment of cash distributions. Distributions in cash that have not been collected within five years and two days after they have become due and payable shall revert to QIAGEN.

Dutch law provides that the declaration of dividends out of the profits that are at the free disposal of the General Meeting is the exclusive right of the General Meeting. This is different from the corporate law of most jurisdictions in the United States, which permits a corporation's board of directors to declare dividends.

Shareholder Meetings, Voting Rights and Other Shareholder Rights

The Annual General Meeting is required to be held within six months after the end of each financial year for the purpose of, among other things, adopting the annual accounts and filling of any vacancies on the Managing Board and Supervisory Board.

Extraordinary General Meetings are held as often as deemed necessary by the Managing Board or Supervisory Board, or upon a request to the Managing Board or Supervisory Board by one or more shareholders and other persons entitled to attend meetings jointly representing (i) at least 40% of our issued share capital, with those persons jointly being authorized to convene such meeting themselves in case the Boards do not timely comply with the request, in accordance with the Articles of Association, or (ii) at least 10% of our issued share capital, with those persons jointly being authorized to convene such meeting themselves in case the Boards do not timely comply with the request, but only if and to the extent authorized thereto by a Dutch court in accordance with the laws of the Netherlands.

General Meetings are held in Amsterdam, Haarlemmermeer (Schiphol Airport), Arnhem, Maastricht, Rotterdam, Venlo or The Hague. The notice convening a General Meeting must be given in such manner as shall be authorized by law including but not limited to an announcement published by electronic means no later than the forty-second day prior to day of the general meeting. The notice will contain the agenda for the meeting or the notice is published along with the agenda.

The agenda shall contain such subjects to be considered at the General Meeting, as the persons convening or requesting the meeting shall decide. Under Dutch law, holders of shares representing solely or jointly at least three hundredth part of the issued share capital may request QIAGEN not later than on the sixtieth day prior to the day of the General Meeting, to include certain subjects in the notice convening a meeting. No valid resolutions can be adopted at a General Meeting in respect of subjects which are not mentioned in the agenda.

Dutch corporate law sets a mandatory (participation and voting) record date for Dutch listed companies fixed at the twenty-eighth day prior to the day of the shareholders' meeting. Shareholders registered at such record date are entitled to attend and exercise their rights as shareholders at the General Meeting, regardless of a sale of shares after the record date.

General Meetings are presided over by the Chairman of the Supervisory Board or, in his absence, by any person nominated by the Supervisory Board.

At the General Meeting, each share shall confer the right to cast one vote, unless otherwise provided by law or our Articles. No votes may be cast in respect of shares that we or our subsidiaries hold, or by usufructuaries and pledgees. All shareholders and other persons entitled to vote at General Meetings are entitled to attend General Meetings, to address the meeting and to vote. They must notify the Managing Board in writing of their intention to be present or represented

not later than on the third day prior to the day of the meeting, unless the Managing Board permits notification within a shorter period of time prior to any such meeting. Subject to certain exceptions, resolutions may be passed by a simple majority of the votes cast.

Except for resolutions to be adopted by the meeting of holders of Preference Shares, our Articles do not allow the adoption of shareholders resolutions by written consent (or otherwise without holding a meeting).

A resolution of the General Meeting to amend our Articles, dissolve QIAGEN, issue shares or grant rights to subscribe for shares or limit or exclude any pre-emptive rights to which shareholders shall be entitled is valid only if proposed to the General Meeting by the Supervisory Board.

A resolution of the General Meeting to amend our Articles is further only valid if the complete proposal has been made available for inspection by the shareholders and the other persons entitled to attend General Meetings at our offices as from the day of notice convening such meeting until the end of the meeting. A resolution to amend our Articles to change the rights attached to the shares of a specific class requires the approval of the relevant class meeting.

Resolutions of the General Meeting in a meeting that has not been convened by the Managing Board and/or the Supervisory Board, or resolutions included on the agenda for the meeting at the request of shareholders, will be valid only if adopted with a majority of two-thirds of votes cast representing more than half the issued share capital, unless our Articles require a greater majority or quorum.

A resolution of the General Meeting to approve a legal merger or the sale of all or substantially all of our assets is valid only if adopted by a vote of at least two-thirds of the issued share capital, unless proposed by the Supervisory Board, in which case a simple majority of the votes cast shall be sufficient.

A shareholder shall upon request be provided, free of charge, with written evidence of the contents of the share register with regard to the shares registered in its name. Furthermore, any shareholder shall, upon written request, have the right, during normal business hours, to inspect our share register and a list of our shareholders and their addresses and shareholdings, and to make copies or extracts therefrom. Such request must be directed to our Managing Directors at our registered office in the Netherlands or at our principal place of business. Financial records and other company documents (other than those made public) are not available in this manner for shareholder review, but an extract of the minutes of the General Meeting shall be made available.

According to Dutch law and our Articles, certain resolutions of the Managing Board regarding a significant change in the identity or nature of us or our enterprise are subject to the approval of the General Meeting. The following resolutions of the Managing Board require the approval of the General Meeting in any event:

(1) the transfer of our enterprise or practically our entire enterprise to a third party;

(2) the entry into or termination of a long-term cooperation by us or one of our subsidiaries (*dochtermaatschappijen*) with another legal person or partnership or as a fully liable general partner of a limited partnership or a general partnership, if such cooperation or termination is of a far-reaching significance for us; and

(3) the acquisition or divestment by us or one of our subsidiaries (*dochtermaatschappijen*) of a participating interest in the capital of a company with a value of at least one-third of the sum of our assets according to our consolidated balance sheet and explanatory notes in our last adopted annual accounts.

No Derivative Actions; Right to Request Independent Inquiry

Dutch law does not afford shareholders the right to institute actions on behalf of us or in our interest. Shareholders, acting alone or together, holding at least one-tenth of our issued capital, or shares representing an aggregate nominal value of EUR 225,000, in nominal value of our shares may inform the Managing Board and the Supervisory Board of their objections as to our policy or the course of our affairs and, within a reasonable time thereafter, may request the Enterprises Chamber of the Court of Appeal in Amsterdam to order an inquiry into the policy and the course of our affairs by independent investigators. If such an inquiry is ordered and the investigators conclude that there has been mismanagement, the shareholders can request the Enterprise Chamber to order certain measures such as a suspension or annulment of resolutions.

Dissolution and Liquidation
The General Meeting may resolve to dissolve QIAGEN upon the proposal of the Supervisory Board. If QIAGEN is dissolved, the liquidation shall be carried out by the person designated for that purpose by the General Meeting, under the supervision of the Supervisory Board. The General Meeting shall upon the proposal of the Supervisory Board determine the remuneration payable to the liquidators and to the person responsible for supervising the liquidation.

During the liquidation process, the provisions of our Articles will remain applicable to the extent possible.

In the event of our dissolution and liquidation, the assets remaining after payment of all debts and liquidation expenses will be distributed among registered holders of Common Shares in proportion to the nominal value of their Common Shares, subject to liquidation preference rights of holders of Preference Shares and Financing Preference Shares, if any.

Restrictions on Transfer of Preference Shares
The Supervisory Board, upon application in writing, must approve each transfer of Preference Shares. If approval is refused, the Supervisory Board will designate prospective purchasers willing and able to purchase the shares, otherwise the transfer will be deemed approved.

Limitations in our Articles on Rights to Own Securities
Other than with respect to usufructuaries and pledgees who have no voting rights, our Articles do not impose limitations on rights to own our securities.

Provisions which May Defer or Prevent a Change in Control
The Option Agreement and our Articles could, under certain circumstances, prevent a third party from obtaining a majority of the voting control of our shares by issuing Preference Shares. Under the Option Agreement, SPAQ could acquire Preference Shares subject to the provisions referred to under "Preference Shares."

If SPAQ acquires the Preference Shares, the bidder may withdraw its bid or enter into negotiations with the Managing Board and/or Supervisory Board and agree on a higher bid price for our shares.

Shareholders who obtain control of a company are obliged to make a mandatory offer to all other shareholders. The threshold for a mandatory offer is set at the ability to exercise 30% of the voting rights at the general meeting of shareholders in a Dutch public limited company (naamloze vennootschap) whose securities are admitted to trading on a regulated market in the EU, such as QIAGEN.

Ownership Threshold Requiring Disclosure
Our Articles do not provide an ownership threshold above which ownership must be disclosed. However, there are statutory requirements to disclose share ownership above certain thresholds under Dutch law — see "Obligation of Shareholders to Disclose Major Holdings."

Exchange Controls
There are currently no limitations either under the laws of the Netherlands or in our Articles, to the rights of shareholders from outside the Netherlands to hold or vote Common Shares. Under current foreign exchange regulations in the Netherlands, there are no material limitations on the amount of cash payments that we may remit to residents of foreign countries.

Obligation of Shareholders to Disclose Major Holdings
Holders of our shares or rights to acquire shares (which include options and convertible bonds - see also below) may be subject to notification obligations under the Dutch Financial Markets Supervision Act (FMSA).

Pursuant to the FMSA, any person who, directly or indirectly, acquires or disposes of an interest (including a potential interest, such as options and convertible bonds) in our issued share capital or voting rights must notify the Netherlands Authority for the Financial Markets (AFM) without delay, if as a result of such acquisition or disposal, the percentage of capital interest or voting rights held by such person in QIAGEN reaches, exceeds or falls below any of the following thresholds: 3%, 5%, 10%, 15%, 20%, 25%, 30%, 40%, 50%, 60%, 75% and 95%. The notifications should be made electronically through the notification system of the AFM.

A notification requirement also applies if a person's capital interest or voting rights reaches, exceeds or falls below the above-mentioned thresholds as a result of a change in our total issued share capital or voting rights. Such notification has to be made no later than the fourth trading day after the AFM has published our notification as described below.

Under the FMSA, we are required to notify the AFM without delay of the changes to our total issued share capital or voting rights if our issued share capital or voting rights changes by 1% or more since our previous notification. We must furthermore quarterly notify the AFM within eight days after the end of the relevant quarter, in the event our issued share capital or voting rights changed by less than 1% in that relevant quarter since our previous notification.

Furthermore, each person who is or ought to be aware that, as a result of the exchange of certain financial instruments, such as options for shares, his actual capital or voting interest in QIAGEN, reaches, exceeds or falls below any of the following thresholds: 3%, 5%, 10%, 15%, 20%, 25%, 30%, 40%, 50%, 60%, 75% and 95%, vis-à-vis his most recent notification to the AFM, must give notice to the AFM no later than the fourth trading day after he became or ought to be aware of this change.

Controlled entities, within the meaning of the FMSA, do not have notification obligations under the FMSA, as their direct and indirect interests are attributed to their (ultimate) parent. Any person may qualify as a parent for purposes of the FMSA, including an individual. A person who has a 3% or larger interest in our share capital or voting rights and who ceases to be a controlled entity for these purposes must notify the AFM without delay. As of the date of that notification, all notification obligations under the FMSA will become applicable to that entity.

For the purpose of calculating the percentage of capital interest or voting rights, the following interests must, inter alia, be taken into account: (i) our shares or voting rights on our shares directly held (or acquired or disposed of) by a person, (ii) our shares or voting rights on our shares held (or acquired or disposed of) by such person's controlled entity, or by a third party for such person's account or by a third party with whom such person has concluded an oral or written voting agreement (including a discretionary power of attorney), and (iii) our shares or voting rights on our shares which such person, or any subsidiary or third party referred to above, may acquire pursuant to any option or other right held by such person (or acquired or disposed of, including, but not limited to, on the basis of convertible bonds). Special rules apply with respect to the attribution of our shares or voting rights on our shares which are part of the property of a partnership or other community of property. A holder of a pledge or right of usufruct (*vruchtgebruik*) in respect of our shares can also be subject to the notification obligations of the FMSA, if such person has, or can acquire, the right to vote on our shares or, in the case of depository receipts, our underlying shares. The acquisition of (conditional) voting rights by a pledgee or usufructuary may also trigger the notification obligations as if the pledgee or beneficial owner were the legal holder of our shares or voting rights on our shares. A holding in certain cash settled derivatives (such as cash settled call options and total equity return swaps) referencing to our shares should also be taken into account for the purpose of calculating the percentage of capital interest.

Gross short positions in our shares must also be notified to the AFM. For these gross short positions, the same thresholds apply as for notifying an actual or potential interest in our issued share capital and/or voting rights as referred to above, and without any set-off against long positions.

In addition, pursuant to Regulation (EU) No 236/2012, each person holding a net short position amounting to 0.2% of our issued share capital is required to report such position to the AFM. Each subsequent increase of this position by 0.1% above 0.2% will also need to be reported. Each net short position equal to 0.5% of our issued share capital and any subsequent increase of that position by 0.1% will be made public via the AFM short selling register. To calculate whether a natural person or legal person has a net short position, their short positions and long positions must be set-off. A short transaction in a share can only be contracted if a reasonable case can be made that the shares sold can actually be delivered, which requires confirmation of a third party that the shares have been located.

The AFM does not issue separate public announcements of the above notifications. However, it does keep a public register of all notifications made pursuant to the above disclosure obligations under the FMSA on its website www.afm.nl. Third parties can request to be notified automatically by e-mail of changes to the public register in relation to a particular company's shares or a particular notifying party.

Non-compliance with the notification obligations under the FMSA may lead to criminal fines, administrative fines, imprisonment or other sanctions. In addition, non-compliance with the shareholding disclosure obligations under the FMSA may lead to civil sanctions, including suspension of the voting rights relating to our shares held by the offender for a period of not more than three years and a prohibition applicable to the offender to acquire any of our shares or voting rights on our shares for a period of up to five years.

Management Notifications

Pursuant to the FMSA, each Managing Director and each Supervisory Director must notify the AFM: (a) within two weeks after his or her appointment of the number of our shares or rights to acquire shares he or she holds and the number of votes he or she is entitled to cast in respect to our issued share capital, and (b) subsequently, each change in the number or our shares or rights to acquire shares such member holds and of each change in the number of votes he or she is entitled to cast in respect of our issued share capital, immediately after the relevant change. If a Managing Director or Supervisory Director has notified the AFM of a change in shareholding under the FMSA as described above under "Obligation of Shareholders to Disclose Major Holdings," such notification is sufficient for the purposes as described in this paragraph.

Furthermore, pursuant to European Union Regulation (EU) No 596/2014 (the Market Abuse Regulation) and the regulations promulgated thereunder, any Managing Director and Supervisory Director, as well as any other person discharging managerial responsibilities in respect of QIAGEN who has regular access to inside information relating directly or indirectly to QIAGEN and power to take managerial decisions affecting future developments and business prospects of QIAGEN, must notify the AFM and QIAGEN by means of a standard form of any transactions conducted for his or her own account relating to the shares or debt instruments of QIAGEN or to derivatives or other financial instruments linked thereto.

In addition, pursuant to the Market Abuse Regulation, certain persons who are closely associated with Managing Directors and Supervisory Directors or any of the other persons as described above, are required to notify the AFM and QIAGEN of any transactions conducted for their own account relating to the shares or debt instruments of QIAGEN or to derivatives or other financial instruments linked thereto. The Market Abuse Regulation covers, inter alia, the following categories of persons: (i) the spouse or any partner considered by national law as equivalent to the spouse; (ii) dependent children; (iii) other relatives who have shared the same household for at least one year at the relevant transaction date; and (iv) any legal person, trust or partnership whose, among other things, managerial responsibilities are discharged by a person referred to under (i) to (iii) above or by the relevant Managing Directors and Supervisory Directors or other person discharging the managerial responsibilities in respect of QIAGEN as described above.

The notifications pursuant to the Market Abuse Regulation described above must be made to the AFM no later than the third business day following the relevant transaction date. Under certain circumstances, these notifications may be postponed until all transactions within a calendar year have reached a total amount of €5,000 (calculated without netting). Any subsequent transaction must be notified as set forth above. If a Managing Director or Supervisory Director has notified a change in the number of our shares or options to acquire shares such member holds or a change in the number of votes he or she is entitled to cast to the AFM under the FMSA as described in the first paragraph above, such notification - but only to the extent there is an overlap with the notifications obligations under the Market Abuse Regulation - is sufficient for the purposes of the Market Abuse Regulation as described in this paragraph.

Taxation

The following is a general summary of certain material United States federal income tax consequences to holders of our Common Shares who are "U.S. Holders" (as such term is defined below) and certain material Netherlands tax consequences to holders of our Common Shares who are "non-resident Shareholders" or "Shareholders" (as each term is defined below). This summary does not discuss every aspect of such taxation that may be relevant to such holders. Therefore, all prospective purchasers of our Common Shares described above are advised to consult their own tax advisors with respect to the United States federal, state and local tax consequences, as well as the Netherlands tax consequences, of the ownership of our Common Shares.

The statements of the Netherlands and United States tax laws set out below are based on the laws in force as of the date of this Annual Report on Form 20-F, and as a consequence are subject to any changes in United States or the Netherlands law, or in the taxation conventions concluded by the United States and the Netherlands, occurring after such date. Tax considerations associated with currently enacted laws which are not in force as of this date have not been addressed in this description.

Netherlands Tax Considerations

The following describes the material tax consequences under Netherlands law of an investment in our Common Shares. Such description is based on current understanding of Netherlands tax law currently in force as interpreted under officially published case law and in published policy, and is limited to the tax implications for an owner of our Common Shares who is not, or is not deemed to be, a resident of the Netherlands for purposes of the relevant tax laws (a "non-resident Shareholder" or "Shareholder").

Dividend Withholding Tax

General

Upon distribution of dividends, we are obligated to withhold 15% dividend tax at source and to pay the amount withheld to the Netherlands taxing authorities. The term "dividends" means income from shares or other rights participating in profits, as well as income from other corporate rights that is subjected to the same taxation treatment as income from shares by the laws of the Netherlands. Dividends include dividends in cash or in kind, constructive dividends, certain repayments of capital qualified as dividends, interest on loans that are treated as equity instruments for Netherlands corporate income tax purposes and liquidation proceeds in excess of, for Netherlands tax purposes, recognized paid-in capital. Stock dividends are also subject to withholding tax, unless derived from our paid-in share premium that is recognized as equity for Netherlands tax purposes.

No dividend withholding tax should apply on the proceeds resulting from the sale or disposition of our Common Shares to persons other than QIAGEN and our affiliates. A disposition of our Common Shares to QIAGEN or to our affiliates should in general be subject to withholding tax.

A domestic exemption from Netherlands dividend withholding tax may apply when dividends are paid to a corporate Shareholder that owns 5% or more of the nominal paid-up share capital and qualifies as a beneficial owner and is solely resident in an EU/EEA Member State or in a country with which the Netherlands has concluded a tax convention that includes a dividend article. This general exemption does not apply to abusive structures. A structure is deemed abusive if a corporate Shareholder owns our Common Shares with the main purpose or one of the main purposes to avoid tax for another person and the structure is considered artificial (i.e., not put into place for valid commercial reasons that reflect economic reality). This domestic exemption may under conditions further not apply in case of hybrid mismatches.

A corporate Shareholder may also be eligible for relief of Netherlands dividend withholding tax under Netherlands tax law, or under a tax convention that is in force between the country of residence of the Shareholder and the Netherlands.

Specific for U.S. Shareholders

The regular 15% dividend withholding tax is withheld by us on dividends we pay to a resident of the United States. For a corporate U.S. Shareholder that cannot benefit from the Dutch domestic exemption (as explained above), withholding tax on dividends may still be reduced to 5% or 0% if the recipient is entitled to benefits under the Tax Convention between the Netherlands and the United States (the Convention), and the relevant specific conditions are met. Dividends we pay to U.S. pension funds and U.S. tax-exempt organizations may be eligible for an exemption from dividend withholding tax under the Convention.

Dividend Stripping

A refund, reduction, exemption, or credit of Netherlands dividend withholding tax on the basis of Netherlands tax law or on the basis of a tax convention between the Netherlands and another state, will only be granted if the dividends are paid to the beneficial owner ("*uiteindelijk gerechtigde*") of the dividends. A recipient of a dividend is amongst others not considered to be the beneficial owner of a dividend in an event of "dividend stripping." In general terms, "dividend stripping" can be described as the situation in which a foreign or domestic person (usually, but not necessarily, the original shareholder) has transferred in return for a consideration its shares or its entitlement to the dividend distributions to a party that has a more favorable right to a refund or reduction of Netherlands dividend withholding tax than the foreign or domestic person. In these situations, the foreign or domestic person (usually the original shareholder) avoids Netherlands dividend withholding tax while retaining an interest in the shares and the dividend distributions, by transferring its shares or its entitlement to the dividend distributions in exchange for a consideration.

Income Tax and Corporate Income Tax

General

A non-resident Shareholder will not be subject to Netherlands income tax or corporate income tax with respect to dividends we distribute on our Common Shares or with respect to capital gains derived from the sale or disposition of our Common Shares, provided that:

a. the non-resident Shareholder does not carry on or have an interest in a business in the Netherlands through a permanent establishment or a permanent representative to which or to whom the Common Shares are attributable or deemed to be attributable;

b. the non-resident Shareholder does not have a direct or indirect substantial or deemed substantial interest ("*aanmerkelijk belang*," as defined in the Netherlands tax law) in our share capital or, in case of an individual, such a substantial interest, such interest is a "business asset," or, in case of a corporate Shareholder, the arrangement or a series of arrangements are not put in place with the main purpose or one of the main purposes to avoid Netherlands income tax for another person or cannot be considered artificial. An arrangement or series of arrangements are considered artificial to the extent not put in place for valid commercial reasons that reflect economic reality; and

c. the non-resident Shareholder is not entitled to a share in the profits of an enterprise, to which our Common Shares are attributable and that is effectively managed in the Netherlands, other than by way of securities or through an employment contract.

In general terms, a substantial interest ("*aanmerkelijk belang*") in our share capital does not exist if the Shareholder (individuals as well as corporations), alone or together with his partner, does not own, directly or indirectly, 5% or more of the issued capital of (a class of) our shares, and does not have the right to acquire 5% or more of the issued capital of (a class of) our shares and does not have the right to share in our profit or liquidation revenue amounting to 5% or more of the annual profits or liquidation revenue.

There is no all-encompassing definition of the term "business asset"; whether this determination can be made in general depends on the facts presented and in particular on the activities performed by the Shareholder. If the Shareholder materially conducts a business activity, while the key motive of his investment in our Shares is not be his earnings out of the investment in our Shares but our economic activity, an investment in our Shares will generally be deemed to constitute a business asset, in particular if the Shareholder's involvement in our business will exceed regular monitoring of his investment in our Shares.

A non-resident Shareholder that holds a substantial interest in our share capital may be eligible for an exemption or a reduction of Netherlands income tax or corporate income tax under a tax convention.

Specific for U.S. Shareholders

U.S. Shareholders that do not own a substantial interest should not be subject to Dutch Personal Income Tax or Dutch Corporate Income Tax (as explained above). For U.S. Shareholders that do own a substantial interest, Dutch Personal Income Tax or Dutch Corporate Income Tax could be due. However, U.S. Shareholders that are entitled to benefits of the Convention may be eligible for tax relief.

Gift and Inheritance Tax

A gift or inheritance of our Common Shares from a non-resident Shareholder should generally not be subject to a Netherlands gift and inheritance tax, provided that the Shareholder is not considered a (deemed) resident of the Netherlands. The Netherlands has concluded a tax convention with the United States based on which double taxation on inheritances may be avoided if the inheritance is subject to Netherlands and/or U.S. inheritance tax and the deceased was a resident of either the Netherlands or the United States.

United States Federal Income Tax Considerations

The following summary describes certain U.S. federal income tax considerations generally applicable to U.S. Holders (as defined below) of our Common Shares. This summary deals only with our Common Shares held as capital assets within the meaning of Section 1221 of the Internal Revenue Code of 1986, as amended (the Code). This summary also does not address the tax consequences that may be relevant to holders in special tax situations including, without limitation, dealers in securities; traders that elect to use a mark-to-market method of accounting; pass-through entities such as partnerships, S corporations, disregarded entities for U.S. federal income tax purposes and limited liability companies (and investors therein); holders that own our Common Shares as part of a "straddle," "hedge," "conversion transaction," or other integrated investment; banks or other financial institutions; individual retirement accounts and other tax-deferred accounts; insurance companies; tax-exempt organizations; U.S. expatriates; holders whose functional currency is not the U.S. dollar; holders subject to the alternative minimum tax; holders that acquired our Common Shares in a compensatory transaction; holders subject to special tax accounting rules

as a result of any item of gross income with respect to the Common Shares being taken into account in an applicable financial statement; or holders that have owned or will (directly, indirectly or constructively) own 10% or more of the total voting power or value of our Common Shares.

This summary is based upon the Code, applicable U.S. Treasury regulations, administrative pronouncements and judicial decisions, in each case as in effect on the date hereof, all of which are subject to change (possibly with retroactive effect). No ruling will be requested from the Internal Revenue Service (IRS) regarding the tax consequences of the initial listing, and there can be no assurance that the IRS will agree with the discussion set out below. This summary does not address any consequences other than U.S. federal income tax consequences (such as the estate and gift tax, the Medicare tax on net investment income, state and local tax, or non-U.S. tax). Except as specifically set forth below, this summary does not discuss applicable tax reporting requirements.

As used herein, the term "U.S. Holder" means a beneficial owner of our Common Shares that is, for U.S. federal income tax purposes, (i) a citizen or resident of the United States, (ii) a corporation or other entity taxable as a corporation created in or organized under the laws of the United States or any state thereof or therein or the District of Columbia, (iii) an estate the income of which is subject to U.S. federal income taxation regardless of its source, or (iv) a trust (a) that is subject to the supervision of a court within the United States and the control of one or more United States persons as described in Section 7701(a)(30) of the Code, or (b) that has a valid election in effect under applicable U.S. Treasury regulations to be treated as a United States person.

If an entity or other arrangement classified as a partnership for U.S. federal income tax purposes acquires our Common Shares, the tax treatment of a partner in the partnership generally will depend upon the status of the partner and the activities of the partnership. Partners of a partnership considering an investment in our Common Shares should consult their tax advisors regarding the U.S. federal income tax consequences of acquiring, owning and disposing our Common Shares.

Taxation of Dividends

Subject to the discussion below under "Passive Foreign Investment Company Status," the sum of any cash plus the fair market value of any property that we distribute (before reduction for Netherlands withholding tax) to a U.S. Holder with respect to our Common Shares generally will be included in the U.S. Holder's gross income as a dividend, taxable as ordinary income from foreign sources to the extent of our current or accumulated earnings and profits (as determined for U.S. federal income tax purposes).

Dividends paid to a non-corporate U.S. Holder by a "qualified foreign corporation" may be subject to a reduced rate of tax if certain conditions are met including the following: QIAGEN must not be classified as a "passive foreign investment company" (PFIC) (discussed below), QIAGEN must be a "qualified foreign corporation" (as defined below), the U.S. Holder must satisfy a holding period requirement, and the distribution must not be treated to the U.S. Holder as "investment income" for purposes of the investment interest deduction rules. A "qualified foreign corporation" generally includes a foreign corporation (other than a foreign corporation that is a PFIC with respect to the relevant U.S. Holder for the taxable year in which the dividends are paid or for the preceding taxable year) (i) whose Common Shares are readily tradable on an established securities market in the United States, or (ii) which is eligible for benefits under a comprehensive U.S. income tax treaty that includes an exchange of information program and which the U.S. Treasury Department has determined is satisfactory for these purposes. Our Common Shares are expected to be readily tradable on the NYSE, an established securities market. U.S. Holders should consult their own tax advisors regarding the availability of the reduced tax rate on dividends in light of their particular circumstances. Dividends on our Common Shares generally will not be eligible for the dividends received deduction available to corporations in respect of dividends received from other U.S. corporations.

Distributions in excess of our earnings and profits (as determined for U.S. federal income tax purposes) will be treated as a non-taxable return of capital to the extent of the U.S. Holder's adjusted tax basis in our Common Shares and thereafter as capital gain. However, we do not intend to calculate our earnings and profits under U.S. federal income tax principles. Therefore, U.S. Holders should expect that a distribution will generally be treated as a dividend even if that distribution would otherwise be treated as a non-taxable return of capital or as capital gain under the rules described above.

Foreign Tax Credit

Subject to the PFIC rules discussed below, a U.S. Holder that is subject to Netherlands withholding tax with respect to dividends paid on the Common Shares generally will be entitled, at the election of such U.S. Holder, to receive either a deduction or a credit for such Netherlands withholding tax. Generally, subject to the limitations described in the next paragraph, a credit will reduce a U.S. Holder's U.S. federal income tax liability on a dollar-for-dollar basis, whereas a

deduction will reduce a U.S. Holder's income subject to U.S. federal income tax. This election is made on a year-by-year basis and generally applies to all foreign taxes paid (whether directly or through withholding) or accrued by a U.S. Holder during a year.

Limitations apply to the foreign tax credit, including the general limitation that the credit cannot exceed the proportionate share of a U.S. Holder's U.S. federal income tax liability (determined before application of the foreign tax credit) that such U.S. Holder's "foreign source" taxable income bears to such U.S. Holder's worldwide taxable income. In applying this limitation, a U.S. Holder's various items of income and deduction must be classified, under complex rules, as either "foreign source" or "U.S. source" and the limitation is calculated separately for each with respect to specific categories of income. Generally, dividends paid by a foreign corporation should be treated as foreign source for this purpose, and gains recognized on the sale of stock of a foreign corporation by a U.S. Holder should generally be treated as U.S. source for this purpose, except as otherwise provided in an applicable income tax treaty or if an election is properly made under the Code. However, the amount of a distribution with respect to the Common Shares that is treated as a "dividend" may be lower for U.S. federal income tax purposes than it is for Netherlands tax purposes, resulting in a reduced foreign tax credit allowance to a U.S. Holder.

Each U.S. Holder should consult its own U.S. tax advisor regarding the foreign tax credit rules.

Disposition of our Common Shares

Subject to the PFIC rules discussed below, upon the sale or other disposition of our Common Shares, a U.S. Holder will recognize capital gain or loss for U.S. federal income tax purposes equal to the difference between the amount realized on the disposition of our Common Shares and the U.S. Holder's adjusted tax basis in our Common Shares. Such capital gain or loss generally will be subject to U.S. federal income tax. In general, capital gains recognized by a non-corporate U.S. Holder, including an individual, are subject to a lower rate under current law if such U.S. Holder held shares for more than one year. The deductibility of capital losses is subject to limitations. Any such gain or loss generally will be treated as U.S. source income or loss for purposes of the foreign tax credit. A U.S. Holder's initial tax basis in Common Shares generally will equal the cost of such shares.

Passive Foreign Investment Company Status

We may be classified as a PFIC for U.S. federal income tax purposes if certain tests are met. We will be a PFIC with respect to a U.S. Holder if, for any taxable year in which the U.S. Holder held our Common Shares, either (i) 75% or more of our gross income for the taxable year is passive income; or (ii) the average value of our assets (during the taxable year) which produce or are held for the production of passive income is at least 50% of the average value of all assets for such year. Passive income means, in general, dividends, interest, royalties, rents (other than rents and royalties derived in the active conduct of a trade or business and not derived from a related person), annuities, and gains from assets which would produce such income other than sales of inventory. Passive assets for this purpose generally include assets held for the production of passive income. Accordingly, passive assets generally include any cash, cash equivalents and cash invested in short-term, interest-bearing debt instruments or bank deposits that are readily convertible into cash. For the purpose of the PFIC tests, if a foreign corporation owns at least 25% (by value) of the stock of another corporation, the foreign corporation is treated as owning its proportionate share of the assets of the other corporation, and as if it had received directly its proportionate share of the income of such other corporation (the "look-through rule"). The effect of the look-through rule with respect to QIAGEN and our ownership of our subsidiaries is that, for purposes of the income and assets tests described above, we will be treated as owning our proportionate share of the assets of our subsidiaries and of earning our proportionate share of each of our subsidiary's income, if any, so long as we own, directly or indirectly, at least 25% of the value of the particular subsidiary's stock. Active business income of our subsidiaries will be treated as our active business income, rather than as passive income. Based on our income, assets and activities, we do not believe that we were a PFIC for our taxable years ended December 31, 2020, December 31, 2021, and December 31, 2022, and do not expect to be a PFIC for the current taxable year. No assurances can be made, however, that the IRS will not challenge this position or that we will not subsequently become a PFIC. Following the close of any tax year, we intend to promptly send a notice to all shareholders of record at any time during such year, if we determine that we are a PFIC.

If we are considered a PFIC for any taxable year that a U.S. Holder holds our Common Shares, any gain recognized by the U.S. Holder on a sale or other disposition of our Common Shares would be allocated pro-rata over the U.S. Holder's holding period for our Common Shares. The amounts allocated to the taxable year of the sale or other disposition and to any year before we became a PFIC would be taxed as ordinary income. The amount allocated to each other taxable year would be subject to tax at the highest rate in effect for individuals or corporations, as appropriate, for that taxable year, and an interest charge would be imposed with respect to any amount allocated to any prior taxable year that we were a PFIC. Further, if we are a PFIC for any taxable year,

to the extent that any distribution received by a U.S. Holder on our Common Shares exceeds 125% of the average of the annual distributions on our Common Shares received during the preceding three years or the U.S. Holder's holding period, whichever is shorter, such excess amount would be subject to taxation in the same manner as gain on the sale or other disposition of Common Shares if we were a PFIC, described above. Certain elections may be available that would result in alternative treatments (such as mark-to-market treatment) of our Common Shares. If we are treated as a PFIC with respect to a U.S. Holder for any taxable year, the U.S. Holder will be deemed to own shares in any of our subsidiaries that also are PFICs. A timely election to treat us as a qualified electing fund under the Code would result in an alternative treatment. However, we do not intend to prepare or provide the information that would enable U.S. Holders to make a qualified electing fund election. If we are considered a PFIC, a U.S. Holder also will be subject to annual information reporting requirements.

Prospective purchasers of our Common Shares are urged to consult their tax advisors regarding the potential application of the PFIC rules to an investment in the Common Shares.

Foreign Currency Issues

If dividends on our Common Shares are paid in euros, the amount of the dividend distribution included in the income of a U.S. Holder will be the U.S. dollar value of the payments made in euros, determined at a spot, euro/U.S. dollar rate applicable to the date such dividend is includible in the income of the U.S. Holder, regardless of whether the payment is in fact converted into U.S. dollars. Generally, gain or loss (if any) resulting from currency exchange fluctuations during the period from the date the dividend is paid to the date such payment is converted into U.S. dollars will be treated as ordinary income or loss.

Backup Withholding and Information Reporting

U.S. backup withholding and information reporting requirements generally apply to payments made to non-corporate holders of Common Shares that are paid within the United States or through certain U.S. related financial intermediaries. Information reporting will apply to payments of dividends on, and to proceeds from the disposition of, Common Shares by a paying agent within the United States (or through certain U.S. related financial intermediaries) to a U.S. Holder, other than U.S. Holders that are exempt from information reporting and properly certify their exemption. A paying agent within the United States (or through certain U.S. related financial intermediaries) will be required to withhold at the applicable statutory rate, currently 24%, in respect of any payments of dividends on, and the proceeds from the disposition of, Common Shares to a U.S. Holder (other than U.S. Holders that are exempt from backup withholding and properly certify their exemption) if the holder fails to furnish its correct taxpayer identification number or otherwise fails to comply with applicable backup withholding requirements. U.S. Holders who are required to establish their exempt status generally must provide a properly completed IRS Form W-9.

Backup withholding is not an additional tax. Amounts withheld as backup withholding may be credited against a U.S. Holder's U.S. federal income tax liability. A U.S. Holder generally may obtain a refund of any amounts withheld under the backup withholding rules that exceed such U.S. Holder's income tax liability by filing a refund claim with the IRS in a timely manner and furnishing required information.

Foreign Financial Asset Reporting

Certain U.S. Holders who hold "specified foreign financial assets" (as defined in Section 6038D of the Code), including stock of a non-U.S. corporation that is not held in an account maintained by a U.S. "financial institution" (as defined in Section 6038D of the Code), whose aggregate value exceeds $50,000 on the last day of the taxable year or $75,000 at any time during the tax year, may be required to attach to their tax returns for the year certain specified information (on IRS Form 8938) (higher thresholds apply to married individuals filing a joint return and certain individuals residing outside of the United States). Persons who fail to timely furnish the required information may be subject to substantial penalties. Additionally, in the event a U.S. Holder does not file such a report, the statute of limitations on the assessment and collection of U.S. federal income taxes of such U.S. Holder for the related tax year may not close before such report is filed. U.S. Holders (including entities) should consult their own tax advisors regarding their reporting obligations and the possible application of such reporting obligations to the holding of Common Shares.

Documents on Display

Documents referred to in this Annual Report may be inspected at our principal executive office located at Hulsterweg 82, 5912 PL Venlo, The Netherlands. We file reports, including annual reports on Form 20-F, furnish periodic reports on Form 6-K and other information with the SEC pursuant to the rules and regulations of the SEC that apply to foreign private issuers. The SEC maintains an Internet site at www.sec.gov that contains reports, information statements,

and other information regarding issuers that file electronically with the SEC, from which the public may obtain any materials the company files with the SEC. The address of the SEC's website is provided solely for information purposes and is not intended to be an active link.

Item 11. Quantitative and Qualitative Disclosures About Market Risk

Our market risk relates primarily to interest rate exposures on cash, short-term investments and borrowings and foreign currency exposures. Financial risk is centrally managed and is regulated by internal guidelines which require a continuous internal risk analysis. The overall objective of our risk management is to reduce the potential negative earnings effects from changes in interest and foreign exchange rates. Exposures are managed through operational methods and financial instruments relating to interest rate and foreign exchange risks. In the ordinary course of business, we use derivative instruments, including swaps, forwards and/or options, to manage potential losses from foreign currency exposures and interest rates. The principal objective of such derivative instruments is to minimize the risks and/or costs associated with global financial and operating activities. We do not utilize derivative or other financial instruments for trading or other speculative purposes. All derivatives are recognized as either assets or liabilities in the balance sheet and are measured at fair value with any change in fair value recognized in earnings in the period of change, unless the derivative qualifies as an effective hedge that offsets certain exposures. In determining fair value, we consider both the counterparty credit risk and our own creditworthiness, to the extent that the derivatives are not covered by collateral agreements with the respective counterparties.

Further details of our derivative and hedging activities can be found in Note 14 "Derivatives and Hedging" in the accompanying consolidated financial statements.

Interest Rate Risk

We use interest rate derivatives to align our portfolio of interest-bearing assets and liabilities with our risk management objectives. Until October 2022, we had interest rate swaps in which we agreed to exchange, at specified intervals, the difference between fixed and floating interest amounts calculated by reference to an agreed-upon notional principal amount. Through the use of interest rate derivatives, we had swapped $127.0 million of our fixed rate debt into a variable interest rate based on the 3-months LIBOR. These outstanding interest rate swaps of $127.0 million matured in October 2022.

At December 31, 2022, we had $730.7 million in cash and cash equivalents as well as $687.6 million in short-term investments. Interest income earned on our cash investments is affected by changes in the relative levels of market interest rates. We only invest in high-grade investment instruments. A hypothetical adverse 10% movement in market interest rates would have impacted our financial statements by approximately $4.5 million.

Borrowings against lines of credit are at variable interest rates. We had no amounts outstanding against our lines of credit at December 31, 2022. A hypothetical adverse 10% movement in market interest rates would not have materially impacted our financial statements.

At December 31, 2022, we had $1.9 billion in long-term debt of which $236.8 million is floating interest rate debt. A hypothetical adverse 10% movement in market interest rates would not have materially impacted our financial statements, as the increased interest expense would have been offset by increased interest income from our variable rate financial assets.

Foreign Currency Exchange Rate Risk

As a global enterprise, we are subject to risks associated with fluctuations in foreign currencies with regard to our ordinary operations. This includes foreign currency-denominated receivables, payables, debt and other balance sheet positions as well as future cash flows resulting from anticipated transactions including intra-group transactions. We manage our balance sheet exposure on a group-wide basis primarily using foreign exchange forward contracts, options and cross-currency swaps.

Russia's February 2022 invasion of Ukraine and the sanctions imposed in response have led to a decline in the value of the ruble which is expected to remain highly volatile. In 2022, we suspended our activities in Russia. As of April 1, 2022, the results of our subsidiary in Turkey are reported under highly inflationary accounting as the prior three-years cumulative inflation rate exceeded 100 percent.

A significant portion of our revenues and expenses are earned and incurred in currencies other than the U.S. dollar. The euro is the most significant such currency, with others including the British pound, Japanese yen, Chinese renminbi, Turkish lira, Brazilian real, Indian rupee, Swiss franc, Canadian dollars and Australian dollars. Fluctuations in the value of the currencies in which we conduct our business relative to the U.S. dollar have caused and will continue to cause U.S. dollar translations of such currencies to vary from one period to another. Due to the number of currencies involved, the constantly changing currency exposures, and the potential substantial volatility of currency exchange rates, we cannot predict the effect of exchange rate fluctuations upon future operating results. In general terms, depreciation of the U.S. dollar against our other foreign currencies will increase reported net sales. However, this effect is, at least partially, offset by the fact that we also incur substantial expenses in foreign currencies.

We have significant production and manufacturing facilities located in Germany and intercompany sales of inventory also expose us to foreign currency exchange rate risk. Intercompany sales of inventory are generally denominated in the local currency of the subsidiary purchasing the inventory in order to centralize foreign currency risk with the manufacturing subsidiary. We use an in-house bank approach to net and settle intercompany payables and receivables as well as intercompany foreign exchanged swaps and forward contracts in order to centralize the foreign exchange rate risk to the extent possible. We have entered in the past and may enter in the future into foreign exchange derivatives including forwards, swaps and options to manage the remaining foreign exchange exposure.

Credit risk

Financial instruments that potentially subject us to concentrations of credit risk are cash and cash equivalents, financial assets, and accounts receivable. We attempt to minimize the risks related to cash and cash equivalents and financial assets by dealing with highly-rated financial institutions and investing in a broad and diverse range of financial instruments. We have established guidelines related to credit quality and maturities of investments intended to maintain safety and liquidity. Concentration of credit risk with respect to accounts receivable is limited due to a large and diverse customer base, which is dispersed over different geographic areas. Allowances are maintained for potential credit losses and such losses have historically been within expected ranges. There were no significant concentrations of credit risk during the reporting period. The maximum exposure to credit risk is represented by the carrying amount of each financial asset in the statement of financial position.

Credit risk is managed on a Company basis, except for credit risk relating to accounts receivable balances. Each local entity is responsible for managing and analyzing the credit risk for each of their new clients before standard payment and delivery terms and conditions are offered.

Counterparty risk

The financial instruments used in managing our foreign currency, equity and interest rate exposures have an element of risk in that the counterparties may be unable to meet the terms of the agreements. To the extent that derivatives are not subject to mutual collateralization agreements, we attempt to minimize this risk by limiting the counterparties to a diverse group of highly-rated international financial institutions. The carrying values of our financial instruments incorporate the non-performance risk by using market pricing for credit risk. However, we have no reason to believe that any counterparties will default on their obligations and therefore do not expect to record any losses as a result of counterparty default. In order to minimize our exposure with any single counterparty, we have entered into all derivative agreements, with the exception of the Call Spread Overlay, under master agreement which allow us to manage the exposure with the respective counterparty on a net basis. Most of these master agreements, include bilateral collateral agreements.

Commodities

We have exposure to price risk related to anticipated purchases of certain commodities used as raw materials in our business. A change in commodity prices may alter the gross margin, but due to the limited exposure to any single raw material, a price change is unlikely to have a material unforeseen impact on earnings. However, in 2022, the volatility in product availability and pricing drastically increased compared to previous years and we expect some level of market constraints to continue in 2023.

Item 12. Description of Securities Other than Equity Securities

Not applicable.

PART II

Item 13. Defaults, Dividend Arrearages and Delinquencies

Not applicable.

Item 14. Material Modifications to the Rights of Security Holders and Use of Proceeds

Not applicable.

Item 15. Controls and Procedures

Disclosure Controls and Procedures

Our Managing Directors, with the assistance of other members of management, performed an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as that term is defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended, within 90 days of the date of this Annual Report. Based on that evaluation, they concluded that as of December 31, 2022, our disclosure controls and procedures were effective to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and is accumulated and communicated to our management, including our Managing Directors, as appropriate to allow timely decisions regarding required disclosure.

There are inherent limitations to the effectiveness of any system of disclosure controls and procedures, no matter how well designed, such as the possibility of human error and the circumvention or overriding of the controls and procedures. Therefore, even those systems determined to be effective may not prevent or detect misstatements and can provide only reasonable assurance of achieving their control objectives. In addition, any determination of effectiveness of controls is not a projection of any effectiveness of those controls to future periods, as those controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Report of Management on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended. The Company's system of internal controls over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the consolidated financial statements in accordance with generally accepted accounting principles.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements and even when determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2022. In making this assessment, management used the updated criteria set forth in 2013 by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework.

Based on our assessment under the COSO Internal Control-Integrated Framework, management believes that, as of December 31, 2022, our internal control over financial reporting is effective.

Attestation Report of the Independent Registered Public Accounting Firm

KPMG AG Wirtschaftsprüfungsgesellschaft, the independent registered public accounting firm that audited our consolidated financial statements prepared in accordance with U.S. generally accepted accounting principles (GAAP) as of and for the year ended December 31, 2022, has also audited the effectiveness of the Company's internal control over financial reporting as of December 31, 2022. Their reports are included in this Annual Report on Form 20-F beginning on page F-1.

Changes in Internal Control over Financial Reporting

There has been no change in our internal control over financial reporting during 2022 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 16A. Audit Committee Financial Expert

The Supervisory Board has designated Dr. Toralf Haag as an "audit committee financial expert" as that term is defined in the SEC rules adopted pursuant to the Sarbanes-Oxley Act. Dr. Haag is "independent" as defined under the independence standards set forth in the New York Stock Exchange (NYSE) Listed Company Manual as applicable to audit committees.

Item 16B. Code of Ethics

QIAGEN has in place a Code of Conduct which qualifies as a code of ethics, as required by SEC and the New York Stock Exchange (NYSE) Listed Company Manual. The Code of Conduct applies to all of QIAGEN's employees, including our principal executive officer, principal financial officer, principal accounting officer or controller and other persons performing similar functions. The full text of the Code of Conduct is available on our website at www.qiagen.com.

Item 16C. Principal Accountant Fees and Services

Audit Committee Pre-Approval Policies and Procedures

Our independent registered public accounting firm is KPMG AG Wirtschaftsprüfungsgesellschaft, Düsseldorf, Germany, Auditor Firm ID: 1021.

The Audit Committee has adopted a policy that requires the pre-approval of all services performed for us by our independent registered public accounting firm. Additionally, the Audit Committee has delegated to the Committee Chair full authority to approve any management request for pre-approval, provided the Chair presents any approval given at its next scheduled meeting. All audit-related services, tax services and other services rendered by our independent registered public accounting firm or their affiliates were pre-approved by the Audit Committee and are compatible with maintaining the auditor's independence.

Set forth below are the total fees billed (or expected to be billed), on a consolidated basis, by the independent registered public accounting firm or their affiliates for providing audit and other professional services in each of the last two years:

(in millions)	**2022**	2021
Audit fees	$2.8	$3.0
Consolidated financial statements	*2.1*	*2.4*
Statutory financial statements	*0.7*	*0.6*
Audit-related fees	—	—
Tax fees	0.3	0.3
All other fees	—	—
Total	**$3.1**	**$3.3**

Audit fees consist of fees and expenses billed for the annual audit and quarterly review of QIAGEN's consolidated financial statements. They also include fees billed for other audit services, which are those services that only the statutory auditor can provide, and include the review of documents filed with the Securities Exchange Commission.

Audit-related fees consist of fees and expenses billed for assurance and related services that are related to the performance of the audit or review of QIAGEN's financial statements and include consultations concerning financial accounting and reporting standards and review of the opening balance sheets of newly acquired companies.

Tax fees include fees and expenses billed for tax compliance services, including assistance on the preparation of tax returns and claims for refund; tax consultations, such as assistance and representation in connection with tax audits and appeals. All other fees include various fees and expenses billed for services, such as transaction due diligence, as approved by the Audit Committee and as permitted by the Sarbanes-Oxley Act of 2002.

Item 16D. Exemptions from the Listing Standards for Audit Committees

Not applicable.

Item 16E. Purchases of Equity Securities by the Issuer and Affiliated Purchasers

Not applicable.

Item 16F. Change in Registrant's Certifying Accountant

Not applicable.

Item 16G. Corporate Governance

We recognize the importance of clear and straightforward rules on corporate governance and, where appropriate, have adapted our internal organization and processes to these rules. This section provides an overview of QIAGEN's corporate governance structure and includes details of the information required under the Dutch Corporate Governance Code (the Dutch Code). The Dutch Code is applicable to QIAGEN N.V. (in the following also referred to as the Company), as it is a publicly listed company incorporated under the laws of the Netherlands with a registered seat in Venlo, The Netherlands. The Dutch Code

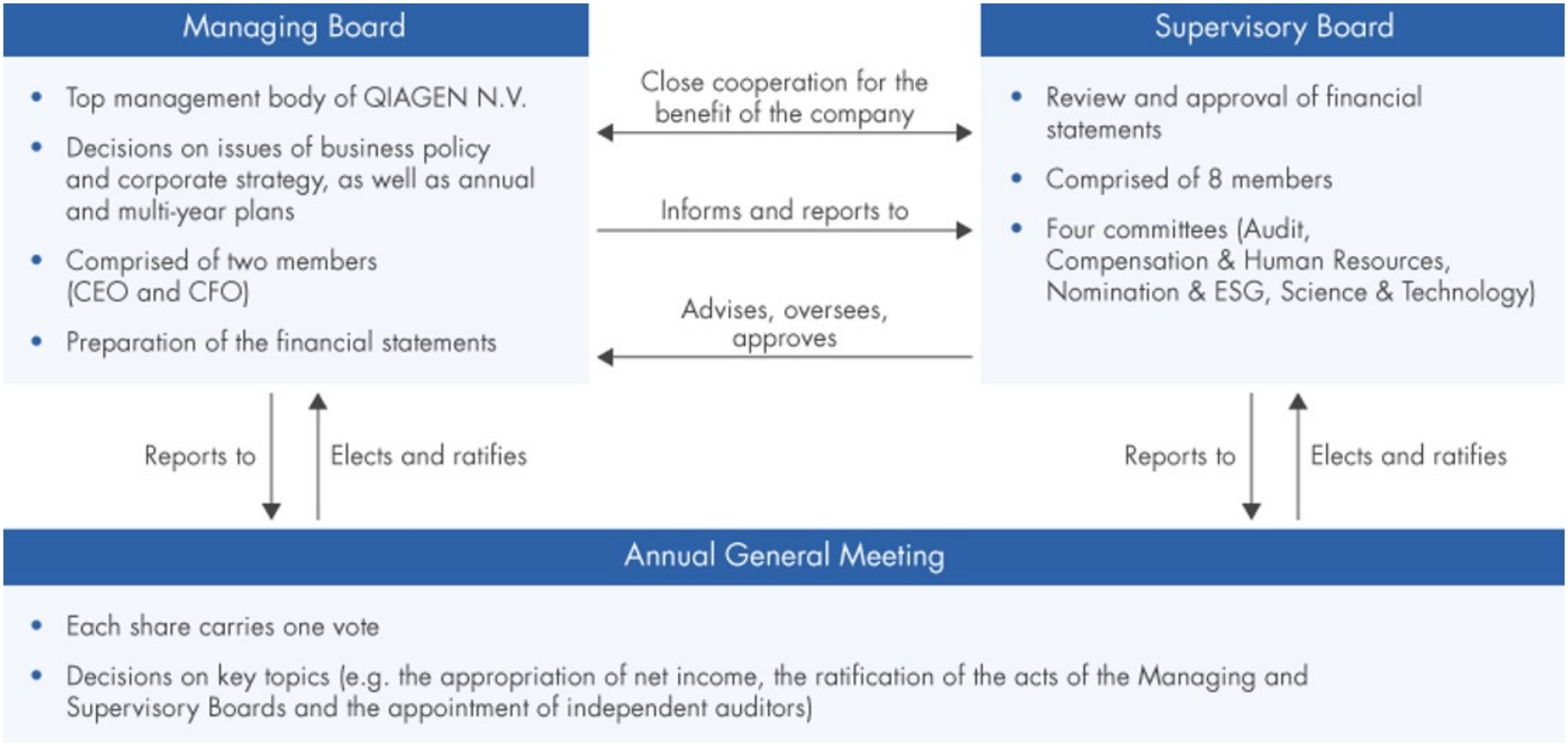
contains the principles and concrete provisions which the persons involved in a listed company (including Managing Board members and Supervisory Board members) and stakeholders should observe in relation to one another.

Our corporate governance practices generally derive from the provisions of the Dutch Civil Code and the Dutch Corporate Governance Code. Further, due to our listing on the New York Stock Exchange in the U.S., the Managing Board and the Supervisory Board of QIAGEN N.V. declared their intention to disclose in QIAGEN's Annual Reports the Company's compliance with the corporate governance practices followed by U.S. companies under the New York Stock Exchange listing standards or state the deviations recorded in the period.

A brief summary of the principal differences follows.

Corporate Structure

QIAGEN is a 'Naamloze Vennootschap,' or N.V., a Dutch limited liability company similar to a corporation in the United States. QIAGEN has a two-tier board structure. QIAGEN is managed by a Managing Board consisting of executive management acting under the supervision of a Supervisory Board (non-executives), similar to a Board of Directors in a U.S. corporation. It is in the interest of QIAGEN and all its stakeholders that each Board performs its functions appropriately and that there is a clear division of responsibilities between the Managing Board, the Supervisory Board, the general meeting of shareholders (General Meeting) and the external auditor in a well-functioning system of checks and balances.



Managing Board

General

The Managing Board manages QIAGEN and is responsible for defining and achieving QIAGEN's aims, strategy, policies and results. The Managing Board is also responsible for complying with all relevant legislation and regulations as well as for managing the risks associated with the business activities and the financing of QIAGEN. It reports related developments to and discusses the internal risk management and control systems with the Supervisory Board and the Audit Committee. The Managing Board is accountable for the performance of its duties to the Supervisory Board and the General Meeting of Shareholders (General Meeting). The Managing Board provides the Supervisory Board with timely information necessary for the exercise of the duties of the Supervisory Board. In discharging its duties, the Managing Board takes into account the interests of QIAGEN, its enterprises and all parties involved in QIAGEN, including shareholders and other stakeholders.

Composition and Appointment

The Managing Board consists of one or more members as determined by the Supervisory Board. The members of the Managing Board are appointed by the General Meeting upon the joint meeting of the Supervisory Board and the Managing Board (the Joint Meeting) having made a binding nomination for each vacancy. However, the General Meeting may at all times overrule the binding nature of such a nomination by a resolution adopted by at least a two-thirds majority of the votes cast, if such majority represents more than half of the issued share capital. Managing Directors are appointed annually for the period beginning on the date following the Annual General Meeting up to and including the date of the Annual General Meeting held in the following year.

Members of the Managing Board may be suspended and dismissed by the General Meeting by a resolution adopted by a two-thirds majority of the votes cast, if such majority represents more than half of the issued share capital, unless the proposal was made by the Joint Meeting, in which case a simple majority of votes cast is sufficient. Furthermore, the Supervisory Board may at any time suspend (but not dismiss) a member of the Managing Board.

Conflicts of Interest, Loans or Similar Benefits

Resolutions to enter into transactions under which members of the Managing Board could have a conflict of interest with QIAGEN, and which are of material significance to QIAGEN and/or the relevant member of the Managing Board, require the approval of the Supervisory Board. QIAGEN has not entered into any such transactions in 2022. No credit, loans or similar benefits were granted to members of the Managing Board. Additionally, the Managing Board members did not receive any benefits from third parties that were either promised or granted in view of their position as members of the Managing Board.

Further information on our Managing Directors can be found in Item 6 of this Annual Report.

Supervisory Board

General

The Supervisory Board supervises the policies of the Managing Board, the general course of QIAGEN's affairs and strategy and the business enterprises which we operate. The Supervisory Board assists the Managing Board by providing advice relating to the business activities of QIAGEN. In 2022, the Supervisory Board had ten meetings, all with the attendance of the Managing Board, and five of which were held in person. The Supervisory Board meets in the absence of the Managing Board for select topics at every regular meeting. In discharging its duties, the Supervisory Board takes into account the interests of QIAGEN, its enterprise and all parties involved in QIAGEN, including shareholders and other stakeholders. The Supervisory Board is responsible for the quality of its own performance. In this respect, the Supervisory Board conducts a self-evaluation on an annual basis. Our Supervisory Board has specified matters requiring its approval, including decisions and actions which would fundamentally change the company's assets, financial position or results of operations. The Supervisory Board has established an Audit Committee, a Compensation & Human Resources Committee, a Nomination & ESG Committee and a Science & Technology Committee from among its members and can establish other committees as deemed beneficial. The Supervisory Board has approved charters pursuant to which each of the committees operates.

Composition and Appointment

The Supervisory Board consists of at least three members, or a larger number as determined by the Joint Meeting. Members of the Supervisory Board are appointed by the General Meeting upon the Joint Meeting having made a binding nomination for each vacancy. However, the General Meeting may at all times overrule the binding nature of such a nomination by a resolution adopted by at least a two-thirds majority of the votes cast, if such majority represents more than half of the issued share capital.

The Supervisory Board shall be composed in a way that enables it to carry out its duties properly and enables its members to act critically and independently of one another and of the Managing Board and any particular interests. To that effect, the Supervisory Board has adopted a profile of its size and composition that takes into account the nature of our business, our activities and the desired diversity, expertise and background of the members of the Supervisory Board. The current profile of the Supervisory Board can be found on our website (www.qiagen.com). The Supervisory Board has appointed a chair from its members who has the duties assigned by the Articles of Association and the Dutch Code.

Members of the Supervisory Board are appointed annually for the period beginning on the date following the General Meeting up to and including the date of the General Meeting held in the following year. Members of the Supervisory Board may be suspended and dismissed by the General Meeting by a resolution adopted by a two-thirds majority of the votes cast, if such majority represents more than half of the issued share capital, unless the proposal was made by the Joint Meeting in which case a simple majority of votes cast is sufficient.

Conflicts of Interest, Loans or Similar Benefits

Resolutions to enter into transactions under which members of the Supervisory Board could have a conflict of interest with QIAGEN, and which are of material significance to QIAGEN and/or the relevant member of the Supervisory Board, must be reported and require the approval of the Supervisory Board plenum. In 2022, neither QIAGEN nor its Supervisory Board members have entered into any such transactions. No credit, loans or similar benefits were granted to members of the Supervisory Board. Additionally, the Supervisory Board Members did not receive any benefits from third parties that were either promised or granted in view of their position as members of the Supervisory Board.

Further information on our Supervisory Directors can be found in Item 6 of this Annual Report.

Additional Information

Shareholders

Our shareholders exercise their voting rights through Annual and Extraordinary General Meetings. Resolutions of the General Meeting are adopted by an absolute majority of votes cast, unless a different majority of votes or quorum is required by Dutch law or the Articles of Association. Each common share confers the right to cast one vote.

Furthermore, the Managing Board, or where appropriate, the Supervisory Board, shall provide all shareholders and other parties in the financial markets with equal and simultaneous information about matters that may influence QIAGEN's share price.

QIAGEN is required to convene an Annual General Meeting in the Netherlands no later than six months following the end of each year. The agenda for the Annual General Meeting must contain certain matters as specified in QIAGEN's Articles of Association and under Dutch law, including, among other things, the adoption of QIAGEN's annual financial statements.

Additional Extraordinary General Meetings may be convened at any time by the Managing Board, the Supervisory Board or by one or more shareholders jointly representing at least 40% of QIAGEN's issued share capital. Furthermore, one or more shareholders, who jointly represent at least 10% of QIAGEN's issued share capital may, on their application, be authorized by the district court judge having applications for interim relief, to convene a General Meeting. Shareholders are entitled to propose items for the agenda of the General Meeting provided that they hold at least 3% of the issued share capital. Proposals for agenda items for the General Meeting must be submitted at least 60 days prior to the meeting date. The notice convening a General Meeting, accompanied by the agenda, shall be sent no later than 42 days prior to the meeting. QIAGEN informs the General Meeting by means of explanatory notes to the agenda, providing all facts and circumstances relevant to the proposed resolutions.

Pursuant to the Dutch Code, all transactions between the company and legal or natural persons who hold at least 10% of the shares in the company shall be agreed on terms that are customary in the sector concerned. Decisions to enter into transactions in which there are conflicts of interest with such persons that are of material significance to the company and/or to such persons require the approval of the Supervisory Board. QIAGEN has not entered into any such transactions in 2022.

Furthermore, pursuant to the Dutch implementation of the Shareholders Rights Directive II (SRD II), certain material transactions with related parties (in the meaning of the standards adopted by the International Accounting Standards Board and approved by the European Commission) require the approval of the Supervisory Board, or, if all Supervisory Directors are involved in such transaction, the General Meeting of Shareholders.

Independence

Unlike the New York Stock Exchange listing standards which require a majority of the Supervisory Board Members to be independent, the Dutch Corporate Governance Code distinguishes between certain independence criteria which may be fulfilled by not more than one Supervisory Board Members (as e.g., prior employment with the Company, receiving personal financial compensation from the Company, or an important business relationship with the Company) and other criteria which may not be fulfilled by more than the majority of the Supervisory Board members. In some cases, the Dutch independence requirement is more stringent, such as by requiring a longer "look back" period (five years) for former executive directors. In other cases, the New York Stock Exchange rules are more stringent, such as a broader definition of disqualifying affiliations. Currently, all members of our Supervisory Board are "independent" under both the New York Stock Exchange and Dutch definitions.

Independent Auditors

In accordance with the requirements of Dutch law, our independent registered public accounting firm for our statutory consolidated financial statements prepared in accordance with International Financial Reporting Standards and filed with the Netherlands Authority for the Financial Markets (AFM), is appointed, and may be removed by, the General Meeting. The Supervisory Board nominates a candidate for the appointment as external auditor, for which the Audit Committee advises the Supervisory Board. At the Annual General Meeting in 2022, KPMG Accountants N.V. was appointed as external auditor for the Company for the 2022 year. The external auditor is invited to attend the meeting of the Supervisory Board at which the statutory financial statements prepared in accordance with International Financial Reporting Standards and filed with the AFM shall be approved and is furthermore invited to attend the General Meeting at which the statutory financial statements are adopted and may be questioned by the General Meeting on its statement on the fairness of our annual accounts prepared in accordance with International Financial Reporting Standards.

Following the appointment of KPMG Accountants N.V. for the audit of our statutory consolidated financial statements, the external auditor for our consolidated financial statements prepared under U.S. generally accepted accounting principles is KPMG AG Wirtschaftsprüfungsgesellschaft who audited the consolidated financial statements as of and for the year ended December 31, 2022, contained in this annual report.

The remuneration of the external auditor, and instructions to the external auditor to provide non-audit services, shall be approved by the Supervisory Board on the recommendation of the Audit Committee and after consultation with the Managing Board. At least once every four years, the Supervisory Board and the Audit Committee shall conduct a thorough assessment of the functioning of the external auditor. The main conclusions of this assessment shall be communicated to the General Meeting for the purposes of assessing the nomination for the appointment of the external auditor.

Whistleblower Policy and Code of Conduct

We have a formal Whistleblower Policy concerning the reporting of alleged irregularities within QIAGEN of a general, operational or financial nature. Furthermore, we have a published Code of Conduct that outlines business principles for our employees and rules of conduct. The Code of Conduct can be found on our website at www.qiagen.com.

Anti-Takeover Measures

In 2004, the Supervisory Board granted an option to the Dutch Foundation Stichting Preferente Aandelen QIAGEN that allows the Foundation to acquire preference shares from QIAGEN if (i) a person has (directly or indirectly) acquired or has expressed a desire to acquire more than 20% of our issued share capital, or (ii) a person holding at least a 10% interest in the share capital has been designated as a hostile person by our Supervisory Board. The option

enables the Foundation to acquire preference shares equal to the number of our outstanding common shares at the time of the relevant exercise of the right, less one share. When exercising the option and exercising its voting rights on these shares, the Foundation must act in the interest of QIAGEN and the interests of our stakeholders. No preference shares are currently outstanding.

Dutch Corporate Governance Code – Comply or Explain

The corporate governance structure and compliance with the Dutch Code is the joint responsibility of the Managing Board and the Supervisory Board. They are accountable for this responsibility to the General Meeting. We continue to seek ways to improve our corporate governance by measuring itself against international best practice. The Dutch Code was last amended on December 8, 2016, and can be found at www.commissiecorporategovernance.nl.

Non-application of a specific best practice provision is not in itself considered objectionable by the Dutch Code and may well be justified because of particular circumstances relevant to a company. In accordance with Dutch law, we disclose in our Annual Report the application of the Dutch Code's principles and best practice provisions.

To the extent that we do not apply certain principles and best practice provisions, or do not intend to apply these in the current or the subsequent year, we state the reasons.

We take a positive view of the Dutch Code and apply nearly all of the best practice provisions. However, we prefer not to apply some provisions due to the international character of our business as well as the fact - acknowledged by the Commission that drafted the Dutch Code - that existing contractual agreements between QIAGEN and individual members of the Managing Board cannot be set aside at will.

The following provides an overview of exceptions that we have identified:

1. *Best practice provision 2.2.2 recommends that a Supervisory Board member is appointed for a period of four years and may then be reappointed once for another four-year period. The Supervisory Board member may then subsequently be reappointed again for a period of two years, which appointment may be extended by at most two years.*

   Members of the Supervisory Board are appointed annually for a one-year period beginning on the day following the General Meeting up to and including the day of the General Meeting held in the following year. Dr. Metin Colpan joined the Supervisory Board in 2004, while Ms. Elizabeth Tallett has been a Supervisory Board member since 2011 and Mr. Lawrence A. Rosen since 2013. Dr. Colpan brings extensive contributions to the Supervisory Board based on his in-depth scientific and commercial experience, and above all his role as a co-founder of QIAGEN. He has also served as a board member for various other healthcare industry companies, which provides unique perspectives and valuable contributions to the discussions of our Board. Ms. Tallett has executive- and board-level experience at a number of international companies, in particular in the pharmaceutical and biotechnology industries. Areas of expertise include international operations, mergers and acquisitions, strategic planning, marketing, product development, talent management and executive compensation. Mr. Rosen is a highly experienced executive who has served at the highest levels of various publicly-listed multinational companies, including Deutsche Post AG, Fresenius Medical Care AG & Co. KGaA and Aventis SA. He contributes to the profile of the Supervisory Board with his knowledge and cross-border expertise developed during a career working primarily in Europe and outside his home country of the United States. Key areas in which Mr. Rosen contributes his expertise include finance, strategy, mergers and acquisitions, investor relations, corporate governance and engagement with the capital markets. QIAGEN highly values and appreciates the full engagement of Dr. Colpan, Ms. Tallett and Mr. Rosen to the success of our Company, and strongly supports their re-appointment.

2. *Best practice provision 2.1.5 recommends that the Supervisory Board should draw up a diversity policy for the composition of the Management Board, the Supervisory Board and, if applicable, the Executive Committee. The policy should address concrete targets relating to diversity and the diversity aspects to the Company, such as nationality, age, gender and education and work background.*

   While QIAGEN strives for a diverse composition of the Supervisory Board, Managing Board and in all other management levels of the Company, we do not consider the definition of concrete targets relating to diversity useful. In accordance with the Dutch Gender Diversity Bill, we have set gender balance targets that we consider appropriate and ambitious as disclosed in our Diversity Policy. We are committed to creating an environment where all individuals have the opportunity to grow and contribute to our progress, regardless of their age, educational background, gender, nationality, physical abilities, race

and ethnic background, religion, or sexual orientation. We consider it to be a key success factor on the path to achieving our mission and goals. Individuals and teams alike understand the diverse needs of our customers, identify and realize cross-functional opportunities for our business areas, and can quickly adapt to a fast changing environment. In 2022, our multicultural workforce was composed of at least 90 nationalities with an average age of 39.5. With 50% women, we are well balanced in terms of gender on an aggregate level. Information on the composition of our Managing Board and Supervisory Board can be found in Item 6.

3. *Best practice provision 3.1.2 vi recommends that when formulating the remuneration policy, it should be considered that shares awarded to members of the Management Board should be held for a period of at least five years*

   Pursuant to the Company's Remuneration Policy, long-term equity-based grants to members of the Managing Board under the 2014 Plan primarily consist of an award of performance stock units, i.e., long-term incentive awards which are dependent upon the achievement of pre-defined performance goals. Grants of restricted stock units, which are based on time vesting only, are no longer to be granted. Performance stock units and restricted stock units granted until February 2018 are basically structured so that 40% of a grant vests after three years, 50% after five years and the remaining 10% after ten years. Grants of performance stock units and restricted stock units granted after February 2018 vest 40% after three years, 60% after five years. Beginning in February 2021, grants of performance stock units vest after three years.

4. *Best practice provision 3.2.3 recommends that the maximum remuneration in the event of dismissal of a Management Board member may not exceed one year's salary (the "fixed" remuneration component).*

   Our Managing Board members have entered into agreements with QIAGEN N.V. and some QIAGEN affiliates for which they hold managing positions. In case of termination of an agreement without serious cause as defined by the applicable law, the respective affiliate would remain obliged to compensate the Managing Board member for the remaining term of the employment agreement.

5. *Best practice provision 2.2.4 recommends that the Supervisory Board should draw up a retirement schedule in order to avoid, as far as possible, a situation in which many Supervisory Board members retire simultaneously. The retirement schedule should be made generally available and should be posted on the company's website.*

   The Supervisory Board follows the practice to discuss retirement plans of individual members early to proactively manage continuity within the Supervisory Board. QIAGEN believes that this practice provides a more flexible and better succession planning than a fixed retirement schedule.

6. *Best practice provision 3.3.2 recommends that a Supervisory Board member may not be granted any shares and/or rights to shares by way of remuneration.*

   QIAGEN has granted stock options to the members of the Supervisory Board as a remuneration component since its establishment until 2013 when we stopped granting stock options. Since 2007, Supervisory Board members have been granted restricted stock units. We believe that the reasonable level of equity-based compensation which we practice allows a positive alignment of shareholder interests with the other duties of the Supervisory Board and that this practice is necessary to attract and retain Supervisory Board members as the granting of share-based compensation to Supervisory Board members is a common practice in our industry.

NYSE Exemptions

Exemptions from the NYSE corporate governance standards are available to foreign private issuers, such as QIAGEN when those standards are contrary to a law, rule or regulation of any public authority exercising jurisdiction over such issuer or contrary to generally accepted business practices in the issuer's country of domicile. In connection with QIAGEN's listing on the NYSE, the NYSE accepted QIAGEN's exemptions from certain corporate governance standards that are contrary to the laws, rules, regulations or generally accepted business practices of the Netherlands. These exemptions and the practices followed by QIAGEN are described below:

- QIAGEN is exempt from NYSE's quorum requirements applicable to meetings of ordinary shareholders. In keeping with the law of the Netherlands and generally accepted business practices in the Netherlands, QIAGEN's Articles of Association provide that there are no quorum requirements generally applicable to meetings of the General Meeting.
- QIAGEN is exempt from NYSE's requirements that shareholder approval be obtained prior to the establishment of, or material amendments to, stock option or purchase plans and other equity compensation arrangements pursuant to which options or stock may be acquired by directors, officers, employees or consultants. QIAGEN is also exempt from NYSE's requirements that shareholder approval be obtained prior to certain issuances of stock resulting in a change of control, occurring in connection with acquisitions of stock or assets of another company or issued at a price less than the greater of book or market value other than in a public offering. QIAGEN's Articles of Association do not require approval of the General Meeting prior to the establishment of a stock plan. The Articles of Association also permit the General Meeting to grant the Supervisory Board general authority to issue shares without further approval of the General Meeting. QIAGEN's General Meeting has granted the Supervisory Board general authority to issue up to a maximum of our authorized capital without further approval of the General Meeting. QIAGEN plans to seek approval of the General Meetings for stock plans and stock issuances only where required under the law of the Netherlands or under QIAGEN's Articles of Association.

Further Information

For additional information regarding our Boards, including Committees of our Supervisory Board, please refer to the discussion in Item 6 above.

Item 16H. Mine Safety Disclosure

Not applicable.

Item 16I. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 17. Financial Statements

See Item 18.

Item 18. Financial Statements

See pages F-1 through F-58 included herein.

(A) The following financial statements, together with the reports of KPMG thereon, are filed as part of this annual report:

Item 19. Exhibits

1.1	Articles of Association as confirmed by notarial deed as of July 8, 2021 (English translation) (Filed as Exhibit 1.1) (1)
2.1	$400 Million Note Purchase Agreement dated as of October 16, 2012 (Filed as Exhibit 2.9) (2)
2.2	Schuldscheindarlehensvertrag Form of Loan Agreement dated as of June 19, 2017 (Filed as Exhibit 2.11) (3)
2.3	2023 Bonds Indenture dated September 13, 2017 (Filed as Exhibit 2.13) (3)
2.4	2023 Form of Warrant Confirmation dated September 6, 2017 (Filed as Exhibit 2.14) (3)
2.5	2023 Form of Bond Hedge Confirmation dated September 6, 2017 (Filed as Exhibit 2.15) (3)
2.6	2024 Bonds Indenture dated November 13, 2018 (Filed as Exhibit 2.17) (4)
2.7	2024 Form of Warrant Confirmation dated November 6, 2018 (Filed as Exhibit 2.18) (4)
2.8	2024 Form of Bond Hedge Confirmation dated November 6, 2018 (Filed as Exhibit 2.19) (4)
2.9	Description of Securities (Filed as Exhibit 2.12) (5)
2.10	Global Bearer Bond Representing Convertible Bonds due 2027 dated as of December 17, 2020 (Filed as Exhibit 2.12) (6)
2.11	Purchase Agent Agreement dated as of December 10, 2020 (Filed as Exhibit 2.13) (6)
2.12	Subscription Agreement dated as of December 10, 2020 (Filed as Exhibit 2.14) (6)
*2.13	Schuldscheindarlehensvertrag Form of Loan Agreement dated as of July 13, 2022
*2.14	Namensschuldverschreibungen Agreement dated as of August 16, 2022
4.1	QIAGEN N.V. Amended and Restated 2005 Stock Plan (Filed as Exhibit 99.1) (7)
4.2	QIAGEN N.V. 2014 Stock Plan (Filed as Exhibit 99.1) (8)
*8.1	List of Subsidiaries
*12.1	Certification under Section 302; Thierry Bernard, Managing Director and Chief Executive Officer
*12.2	Certification under Section 302; Roland Sackers, Managing Director and Chief Financial Officer
*13.1	Certifications under Section 906; Thierry Bernard, Managing Director and Chief Executive Officer and Roland Sackers, Managing Director and Chief Financial Officer
*15.1	Consent of Independent Registered Public Accounting Firm
*101	Inline XBRL Interactive Data File
*104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

* Filed herewith.

(1) Incorporated by reference to Form 20-F Annual Report of QIAGEN N.V. filed with the Securities and Exchange Commission on March 14, 2022.

(2) Incorporated by reference to Form 20-F Annual Report of QIAGEN N.V. filed with the Securities and Exchange Commission on March 4, 2013.

(3) Incorporated by reference to Form 20-F Annual Report of QIAGEN N.V. filed with the Securities and Exchange Commission on March 6, 2018.

(4) Incorporated by reference to Form 20-F Annual Report of QIAGEN N.V. filed with the Securities and Exchange Commission on March 6, 2019.

(5) Incorporated by reference to Form 20-F Annual Report of QIAGEN N.V. filed with the Securities and Exchange Commission on March 2, 2020.

(6) Incorporated by reference to Form 20-F Annual Report of QIAGEN N.V. filed with the Securities and Exchange Commission on March 5, 2021.

(7) Incorporated by reference to Registration Statement of QIAGEN N.V. on Form S-8 filed with the Securities and Exchange Commission on November 17, 2011.

(8) Incorporated by reference to Registration Statement of QIAGEN N.V. on Form S-8 filed with the Securities and Exchange Commission on April 2, 2015.

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

QIAGEN N.V.

Dated: March 10, 2023

By: /s/ Thierry Bernard

Thierry Bernard, Chief Executive Officer

/s/ Roland Sackers

Roland Sackers, Chief Financial Officer

QIAGEN N.V. AND SUBSIDIARIES

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Shareholders and Supervisory Board

QIAGEN N.V.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of QIAGEN N.V. and subsidiaries (the Company) as of December 31, 2022 and 2021, the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2022, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated March 10, 2023 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, in 2021, the Company changed its method of accounting for convertible instruments due to the adoption of ASU 2020-06, Debt-Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Assessment of unrecognized tax benefits

As discussed in Note 17 to the consolidated financial statements, the Company conducts its business globally and operates more than 50 consolidated subsidiaries in multiple tax jurisdictions. This multi-jurisdictional business operation involves complex intercompany operating and financing activities. The nature of these activities can result in uncertainties in the estimation of the related income tax exposures. The Company initially recognizes and subsequently measures the unrecognized tax benefit in its consolidated financial statements when it is more likely than not that the position will be sustained upon examination by the taxing authorities. As at December 31, 2022, the Company recorded unrecognized tax benefits of $79.3 million.

We identified the assessment of unrecognized tax benefits as a critical audit matter. Complex auditor judgment and specialized skills and knowledge were required in evaluating the Company's interpretation and application of tax laws in the jurisdictions where it operates and its estimate of the resolution of the tax position.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's unrecognized tax benefit process, including controls related to (1) its interpretation and application of tax statutes and legislation, and changes thereto, in the various jurisdictions in which it operates and (2) its determination of the estimate for the associated unrecognized tax benefit. We inspected the Company's legal composition to identify and assess changes in operating structures and financing arrangements. We inquired of the Company's tax department in combination with inspecting correspondence with the responsible taxing authorities with respect to the results of inspections by taxing authorities. We involved tax and transfer pricing professionals with specialized skills and knowledge, who assisted in:

- analyzing the Company's interpretation and application of multi-jurisdictional income tax laws, and changes thereto, and its impact on the unrecognized tax benefit by reading advice obtained from the Company's external specialists
- inspecting the lapse of statute of limitations and settlements with taxing authorities over a selection of unrecognized tax benefits to evaluate the amount in the settlement documents compared to the unrecognized tax benefit, and
- inspecting a selection of intercompany operating and financing activities between group entities to assess the sustainability of tax positions based on their technical merits and the probabilities of possible settlement alternatives

/s/ KPMG AG Wirtschaftsprüfungsgesellschaft

We have served as the Company's auditor since 2015.

Düsseldorf, Germany

March 10, 2023

Report of Independent Registered Public Accounting Firm

To the Shareholders and Supervisory Board

QIAGEN N.V.:

Opinion on Internal Control Over Financial Reporting

We have audited QIAGEN N.V. and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2022 and 2021, the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2022, and the related notes (collectively, the consolidated financial statements), and our report dated March 10, 2023 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying 'Report of Management on Internal Control over Financial Reporting'. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG AG Wirtschaftsprüfungsgesellschaft

Düsseldorf, Germany

March 10, 2023

Consolidated Financial Statements

QIAGEN N.V. and Subsidiaries Consolidated Balance Sheets

(in thousands)	Notes	As of December 31, **2022**	2021
Assets			
Current assets:			
Cash and cash equivalents	(3)	$730,669	$880,516
Short-term investments	(7)	687,597	184,785
Accounts receivable, net of allowance for credit losses of $22,880 and $23,124, respectively	(3, 24)	323,750	362,131
Inventories, net	(3)	357,960	327,525
Prepaid expenses and other current assets (of which $11,929 and $16,956 due from related parties, respectively)	(8, 24)	293,976	354,645
Total current assets		2,393,952	2,109,602
Long-term assets:			
Property, plant and equipment, net of accumulated depreciation of $502,967 and $632,416, respectively	(9)	662,170	638,183
Goodwill	(11)	2,352,569	2,350,763
Intangible assets, net of accumulated amortization of $727,691 and $806,787, respectively	(11)	544,796	627,436
Fair value of derivative instruments - long-term	(14)	131,354	190,430
Other long-term assets	(10, 12, 17)	202,894	230,540
Total long-term assets		3,893,783	4,037,352
Total assets		**$6,287,735**	**$6,146,954**

The accompanying notes are an integral part of these consolidated financial statements.

QIAGEN N.V. and Subsidiaries Consolidated Balance Sheets

(in thousands, except par value)	Notes	As of December 31, 2022	2021
Liabilities and equity			
Current liabilities:			
Current portion of long-term debt	(16)	$389,552	$847,626
Accounts payable	(24)	98,734	101,224
Accrued and other current liabilities	(13, 24)	486,237	568,620
Total current liabilities		974,523	1,517,470
Long-term liabilities:			
Long-term debt, net of current portion	(16)	1,471,898	1,094,144
Fair value of derivative instruments - long-term	(14)	156,718	191,879
Other long-term liabilities	(10, 12, 15,17)	217,985	246,911
Total long-term liabilities		1,846,601	1,532,934
Commitments and contingencies	(20)		
Equity:			
Preference shares, 0.01 EUR par value, authorized—450,000 shares, no shares issued and outstanding		—	—
Financing preference shares, 0.01 EUR par value, authorized—40,000 shares, no shares issued and outstanding		—	—
Common Shares, 0.01 EUR par value, authorized—410,000 shares, issued—230,829 shares		2,702	2,702
Additional paid-in capital		1,868,015	1,818,508
Retained earnings		2,160,173	1,791,740
Accumulated other comprehensive loss	(18)	(404,091)	(326,670)
Less treasury shares, at cost—3,113 and 3,755 shares, respectively	(18)	(160,188)	(189,730)
Total equity		3,466,611	3,096,550
Total liabilities and equity		**$6,287,735**	**$6,146,954**

The accompanying notes are an integral part of these consolidated financial statements.

QIAGEN N.V. and Subsidiaries Consolidated Statements of Income

		Years ended December 31,		
(in thousands, except par value)	Notes	**2022**	2021	2020
Net sales	(3, 4, 24)	$2,141,518	$2,251,657	$1,870,346
Cost of sales:				
Cost of sales		696,472	733,719	574,467
Acquisition-related intangible amortization		60,483	67,118	63,164
Total cost of sales		756,955	800,837	637,631
Gross profit		1,384,563	1,450,820	1,232,715
Operating expenses:				
Research and development	(3)	189,859	189,964	149,072
Sales and marketing		474,220	456,392	413,684
General and administrative	(3)	129,725	128,076	111,678
Acquisition-related intangible amortization		14,531	18,542	20,811
Restructuring, acquisition, integration and other, net	(1, 3, 6)	44,768	27,762	151,039
Total operating expenses		853,103	820,736	846,284
Income from operations		531,460	630,084	386,431
Other income (expense):				
Interest income		32,757	9,555	10,032
Interest expense		(58,357)	(54,477)	(71,317)
Other income, net	(6)	6,741	40,671	114,326
Total other (expense) income, net		(18,859)	(4,251)	53,041
Income before income tax expense		512,601	625,833	439,472
Income tax expense	(3, 17)	89,390	113,234	80,284
Net income		**$423,211**	**$512,599**	**$359,188**
Basic earnings per common share	(19)	$1.86	$2.25	$1.57
Diluted earnings per common share	(19)	$1.84	$2.21	$1.53
Weighted-average common shares outstanding:				
Basic	(19)	227,577	227,983	228,427
Diluted	(19)	230,136	232,034	234,214

The accompanying notes are an integral part of these consolidated financial statements.

QIAGEN N.V. and Subsidiaries Consolidated Statements of Comprehensive Income

		Years ended December 31,		
(in thousands)	Notes	**2022**	2021	2020
Net income		$423,211	$512,599	$359,188
Other comprehensive income (loss) to be reclassified to profit or loss in subsequent periods:				
Gains (losses) on cash flow hedges (net of tax of $0, $0 and $2,845, respectively)	(14)	(24,098)	16,780	(8,536)
Reclassification adjustments on cash flow hedges (net of tax of $0, $0 and $4,666, respectively)	(14)	21,940	(17,010)	13,999
Cash flow hedges, net of tax		(2,158)	(230)	5,463
Net investment hedge	(14)	(14,724)	24,743	(26,442)
Gain (loss) on pension (net of tax of $528, $5 and $16, respectively)		1,233	11	(38)
Foreign currency translation adjustments (net of tax of $854, $1,674 and $946, respectively)		(61,772)	(107,372)	86,814
Total other comprehensive (loss) income		(77,421)	(82,848)	65,797
Comprehensive income		**$345,790**	**$429,751**	**$424,985**

The accompanying notes are an integral part of these consolidated financial statements.

QIAGEN N.V. and Subsidiaries Consolidated Statements of Changes in Equity

(in thousands)	Notes	Common Shares		Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Shares		Total Equity
		Shares	Amount				Shares	Amount	
Balance at December 31, 2019		230,829	$2,702	$1,777,017	$1,178,457	($309,619)	(3,077)	($111,966)	$2,536,591
ASC 326 impact of change in accounting policy		—	—	—	(15,074)	—	—	—	(15,074)
Net income		—	—	—	359,188	—	—	—	359,188
Conversion of warrants	(18)	—	—	(7,547)	(22,725)	—	807	30,272	—
Termination of warrants	(18)	—	—	(30,289)	(144,337)	—	—	—	(174,626)
Equity component of convertible debt, net	(16)	—	—	54,052	—	—	—	—	54,052
Total other comprehensive income		—	—	—	—	65,797	—	—	65,797
Purchase of treasury shares	(18)	—	—	—	—	—	(1,346)	(63,995)	(63,995)
Issuance of common shares in connection with stock plan	(22)	—	—	—	(32,418)	—	1,085	40,079	7,661
Tax withholding related to vesting of stock awards	(22)	—	—	—	—	—	(313)	(12,691)	(12,691)
Share-based compensation	(22)	—	—	40,936	—	—	—	—	40,936
Balance at December 31, 2020		**230,829**	**$2,702**	**$1,834,169**	**$1,323,091**	**($243,822)**	**(2,844)**	**($118,301)**	**$2,797,839**
ASU 2020-06 impact of change in accounting policy	(2)	—	—	(54,052)	263	—	—	—	(53,789)
Net income		—	—	—	512,599	—	—	—	512,599
Total other comprehensive loss		—	—	—	—	(82,848)	—	—	(82,848)
Purchase of treasury shares	(18)	—	—	—	—	—	(1,891)	(99,987)	(99,987)
Issuance of common shares in connection with stock plan	(22)	—	—	—	(44,213)	—	1,441	52,132	7,919
Tax withholding related to vesting of stock awards	(22)	—	—	—	—	—	(461)	(23,574)	(23,574)
Share-based compensation	(22)	—	—	38,391	—	—	—	—	38,391
Balance at December 31, 2021		**230,829**	**$2,702**	**$1,818,508**	**$1,791,740**	**($326,670)**	**(3,755)**	**($189,730)**	**$3,096,550**
Net income		—	—	—	423,211	—	—	—	423,211
Total other comprehensive loss		—	—	—	—	(77,421)	—	—	(77,421)
Issuance of common shares in connection with stock plan	(22)	—	—	—	(54,778)	—	1,171	54,899	121
Tax withholding related to vesting of stock awards	(22)	—	—	—	—	—	(529)	(25,357)	(25,357)
Share-based compensation	(22)	—	—	49,507	—	—	—	—	49,507
Balance at December 31, 2022		**230,829**	**$2,702**	**$1,868,015**	**$2,160,173**	**($404,091)**	**(3,113)**	**($160,188)**	**$3,466,611**

The accompanying notes are an integral part of these consolidated financial statements.

QIAGEN N.V. and Subsidiaries Consolidated Statements of Cash Flows

(in thousands)	Notes	Years ended December 31, 2022	2021	2020
Cash flows from operating activities:				
Net income		$423,211	$512,599	$359,188
Adjustments to reconcile net income to net cash provided by operating activities, net of effects of businesses acquired:				
Depreciation and amortization		208,397	214,931	205,014
Non-cash impairments	(6)	12,970	—	1,432
Amortization of debt discount and issuance costs		33,701	32,294	42,318
Share-based compensation expense	(22)	49,507	38,391	40,936
Deferred tax benefit	(17)	(9,603)	(5,288)	(6,706)
Loss (gain) on marketable securities		6,230	6,550	(1,992)
Gain on sale of investment	(10)	—	(36,086)	(121,813)
Other items, net including fair value changes in derivatives		22,732	5,622	11,696
Net changes in operating assets and liabilities:				
Accounts receivable	(3)	15,451	(7,402)	(14,711)
Inventories	(3)	(61,950)	(81,803)	(107,573)
Prepaid expenses and other current assets	(8)	58,999	13,918	1,061
Other long-term assets		(2,025)	1,400	316
Accounts payable		(1,756)	(5,975)	8,442
Accrued and other current liabilities	(13)	(17,837)	(71,681)	(22,141)
Income taxes	(17)	(21,894)	(12,832)	4,682
Other long-term liabilities		(869)	34,363	57,657
Net cash provided by operating activities		715,264	639,001	457,806
Cash flows from investing activities:				
Purchases of property, plant and equipment		(129,224)	(189,904)	(132,787)
Purchases of intangible assets	(11)	(20,112)	(16,630)	(171,450)
(Purchases of) proceeds from investments, net	(10)	(1,156)	(2,645)	25,638
Cash paid for acquisitions, net of cash acquired	(5)	(63,651)	—	(239,572)
Purchases of short-term investments	(7)	(1,385,929)	(397,650)	(49,770)
Proceeds from redemptions of short-term investments	(7)	883,083	359,560	181,223
Proceeds from divestiture	(5)	—	—	1,845
Cash (paid) received for collateral asset	(14)	(9,881)	44,900	(53,417)
Other investing activities		107	(57)	(4,991)
Net cash used in investing activities		(726,763)	(202,426)	(443,281)

QIAGEN N.V. and Subsidiaries Consolidated Statements of Cash Flows

(in thousands)	Notes	Years ended December 31, 2022	2021	2020
Cash flows from financing activities:				
Proceeds from short-term debt	(16)	—	—	59,345
Repayment of short-term debt	(16)	—	—	(58,705)
Proceeds from long-term debt, net of issuance costs	(16)	371,452	—	497,646
Repayment of long-term debt	(16)	(480,003)	(41,345)	(296,400)
Payment for termination of warrants	(18)	—	—	(174,627)
Payment of intrinsic value of cash convertible notes	(16)	—	—	(237,438)
Proceeds from exercise of call option related to cash convertible notes	(16)	—	—	239,836
Purchase of treasury shares	(18)	—	(99,987)	(63,995)
Proceeds from issuance of common shares		121	7,919	7,662
Tax withholding related to vesting of stock awards		(25,357)	(23,574)	(13,841)
Cash paid for contingent consideration		(4,572)	—	—
Cash received for collateral liability		12,556	8,600	—
Other financing activities		—	(1,979)	(9,610)
Net cash used in financing activities		(125,803)	(150,366)	(50,127)
Effect of exchange rate changes on cash, cash equivalents and restricted cash		(12,545)	(3,677)	4,196
Net (decrease) increase in cash, cash equivalents and restricted cash		(149,847)	282,532	(31,406)
Cash, cash equivalents and restricted cash, beginning of period		880,516	597,984	629,390
Cash, cash equivalents and restricted cash, end of period		$730,669	$880,516	$597,984
Supplemental cash flow disclosures:				
Cash paid for interest		$23,208	$21,588	$25,351
Cash paid for income taxes, net of refunds		$98,565	$102,083	$42,572
Supplemental disclosure of non-cash investing activities:				
Equity securities acquired in non-monetary exchange	(10)	$1,475	$35,705	$122,368
Intangible asset received in exchange for note receivable	(24)	$—	$14,989	$—

The accompanying notes are an integral part of these consolidated financial statements.

Notes to the Consolidated Financial Statements

December 31, 2022

1. Corporate Information and Basis of Presentation

Corporate Information

QIAGEN N.V. is a public limited liability company (naamloze vennootschap) under Dutch law with a registered office at Hulsterweg 82, 5912 PL Venlo, The Netherlands. QIAGEN N.V., a Netherlands holding company, and subsidiaries (we, our or the Company) is a leading global provider of Sample to Insight solutions that enable customers to gain valuable molecular insights from samples containing the building blocks of life. Our sample technologies isolate and process DNA, RNA and proteins from blood, tissue and other materials. Assay technologies make these biomolecules visible and ready for analysis. Bioinformatics software and knowledge bases interpret data to report relevant, actionable insights. Automation solutions tie these together in seamless and cost-effective workflows. We provide solutions to more than 500,000 customers around the world in Molecular Diagnostics (human healthcare) and Life Sciences (academia, pharma R&D and industrial applications, primarily forensics). As of December 31, 2022, we employed approximately 6,200 people in over 35 locations worldwide.

Basis of Presentation

The accompanying consolidated financial statements were prepared in accordance with U.S. generally accepted accounting principles (GAAP) and all amounts are presented in U.S. dollars rounded to the nearest thousand, unless otherwise indicated.

Beginning April 1, 2022, the results of our subsidiary in Turkey are reported under highly inflationary accounting as the prior three-years cumulative inflation rate exceeded 100 percent.

QIAGEN has a subsidiary in Moscow, Russia. Due to uncertainties related to the war in Ukraine, and although not material to our consolidated results of operations, during the year ended December 31, 2022, we recorded a combination of credit losses, write-offs and impairments related to our business in Russia totaling $4.0 million. These charges are included in the line item restructuring, acquisition, integration and other, net in the accompanying consolidated statements of income. We have suspended activities in Russia and also with our former commercial partner in Belarus.

We undertake acquisitions to complement our own internal product development activities. In May 2022, we acquired BLIRT S.A., a supplier of standardized and customized solutions for proteins and enzymes as well as molecular biology reagents located in Gdańsk, Poland. Its offering includes proteins and enzymes that are critical to the life sciences industry and diagnostic kit manufacturers. The cash consideration, net of cash acquired was $63.7 million. The acquisition was not significant to the overall consolidated financial statements and as of December 31, 2022, the allocation of the purchase price was preliminary. In September 2020, we completed the acquisition of the remaining shares in NeuMoDx Molecular, Inc. (NeuMoDx), a privately-held U.S. company that designs and develops molecular diagnostics solutions for hospital and clinical reference laboratories. Accordingly, at the acquisition dates, all the assets acquired and liabilities assumed were recorded at their respective fair values and our consolidated results of operations include the operating results from the acquired companies from the acquisition dates.

Certain prior year amounts have been reclassified to conform to the current year presentation.

2. Effects of New Accounting Pronouncements

The following new Financial Accounting Standards Board (FASB) Accounting Standards Updates (ASU) were adopted in 2022, 2021 and 2020:

Adoption of New Accounting Standards in 2022

ASU 2021-08, Accounting for Contract Assets and Contract Liabilities from Contracts with Customers, creates an exception to the recognition and measurement principles in ASC 805, Business Combinations. The amendments require an acquirer to use the guidance in ASC 606, Revenue from Contracts with Customers, rather than using fair value, when recognizing and measuring contract assets and contract liabilities related to customer contracts assumed in a business combination. We early adopted ASU 2021-08 on January 1, 2022. The amended guidance applies on a prospective basis to business combinations that occur after the adoption date.

Adoption of New Accounting Standards in 2021

ASU 2019-12, Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes, removed certain exceptions for recognizing deferred taxes for investments, performing intraperiod tax allocations and calculating income taxes in interim periods. The ASU also adds guidance to reduce complexity in certain areas, including recognizing deferred taxes for tax goodwill and allocating income taxes to members of a consolidated group. We adopted the ASU on the effective date of January 1, 2021 and the adoption of this guidance did not have an impact on our consolidated financial statements on the date of adoption.

ASU 2020-06, Debt-Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity, reduced the number of accounting models for convertible instruments. The ASU also amended diluted earnings per share (EPS) calculations for convertible instruments, which will result in more dilutive EPS results, and also amended the requirements for a contract (or embedded derivative) that is potentially settled in an entity's own shares to be classified in equity. ASU 2020-06 was effective for annual periods beginning on January 1, 2022, with earlier adoption on January 1, 2021 permitted. We adopted ASU 2020-06 early on January 1, 2021 and this resulted in a decrease of $54.1 million to additional paid-in capital and an increase of $0.3 million to retained earnings for the conversion feature to the liability for our 2027 Convertible Notes further discussed in Note 16 "Debt".

Adoption of New Accounting Standards in 2020

ASU 2016-13, Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments, replaced the incurred loss impairment methodology with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to form credit loss estimates. We adopted Topic 326 on January 1, 2020 using the modified retrospective approach by recognizing the effect of initially applying Topic 326 as an after-tax $15.1 million ($19.6 million pre-tax) adjustment to the opening balance of retained earnings at January 1, 2020 for credit losses on loans, notes and accounts receivable. The adoption did not have an impact on our consolidated statements of income or cash flows.

ASU 2018-18, Collaborative Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606, precludes an entity from presenting consideration from a transaction in a collaborative arrangement as revenue from contracts with customers if the counterparty is not a customer of that transaction. We adopted ASU 2018-18 on January 1, 2020 without any cumulative effect.

ASU 2020-03, Codification Improvements to Financial Instruments, was issued to improve and clarify various financial instrument topics, including Topic 326 issued in 2016. The ASU includes seven issues that describe areas of improvement and the related amendments to GAAP. They are intended to make the standards easier to understand and apply and to eliminate inconsistencies. They are narrow in scope and are not expected to significantly change practice for most entities. We adopted ASU 2020-03 on January 1, 2020 without any effect.

ASU 2020-01, Investments-Equity Securities (Topic 321), Investments-Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815)-Clarifying the Interactions between Topic 321, Topic 323, and Topic 815, addresses accounting for the transition into and out of the equity method and measuring certain purchased options and forward contracts to acquire investments. We adopted ASU 2020-01 on June 30, 2020 without any impact.

New Accounting Standards Not Yet Adopted

As of December 31, 2022, there are no recently issued but not yet adopted accounting pronouncements that are expected to materially impact our consolidated financial statements.

3. Summary of Significant Accounting Policies

Principles of Consolidation

The consolidated financial statements include the accounts of QIAGEN N.V. and its wholly-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated. Investments in either common stock or in-substance common stock of companies where we exercise significant influence over the operations but do not have control, and where we are not the primary beneficiary, are accounted for using the equity method. All other investments are accounted for as discussed under "Non-marketable Investments" below. When there is a portion of equity in an acquired subsidiary not attributable, directly or indirectly, to the Company, we record the fair value of the noncontrolling interests at the acquisition date and classify the amounts attributable to noncontrolling interests separately in equity in the consolidated financial statements. Any subsequent changes in the Company's ownership interest while the Company retains its controlling financial interest in its subsidiary are accounted for as equity transactions.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities and disclosure of contingencies at the date of the financial statements as well as the reported amounts of revenues and expenses during the reporting period. While changing conditions regarding the war in Ukraine and the COVID-19 pandemic recovery present additional uncertainty, we continue to use the best information available to form our estimates. Actual results could differ from those estimates.

Concentrations of Risk

We buy materials for products from many suppliers, and are not dependent on any one supplier or group of suppliers for the business as a whole. However, key components of certain products, including certain instrumentation components and chemicals, are available only from a single source. If supplies from these vendors were delayed or interrupted for any reason, we may not be able to obtain these materials timely or in sufficient quantities in order to produce certain products and sales levels could be negatively affected. Additionally, our customers include researchers at pharmaceutical and biotechnology companies, academic institutions, and government and private laboratories. Fluctuations in the research and development budgets of these researchers and their organizations for applications in which our products are used could have a significant effect on the demand for our products.

The financial instruments used in managing our foreign currency, equity and interest rate exposures have an element of risk in that the counterparties may be unable to meet the terms of the agreements. We attempt to minimize this risk by limiting the counterparties to a diverse group of highly-rated international financial institutions. The carrying values of our financial instruments incorporate the non-performance risk by using market pricing for credit risk. However, we have no reason to believe that any counterparties will default on their obligations. In order to minimize our exposure with any single counterparty, we have entered into master agreements which allow us to manage the exposure with the respective counterparty on a net basis.

Other financial instruments that potentially subject us to concentrations of credit risk are cash and cash equivalents, short-term investments, and accounts receivable. We attempt to minimize the risks related to cash and cash equivalents and short-term investments by dealing with highly-rated financial institutions and investing in a broad and diverse range of financial instruments. We have established guidelines related to credit quality and maturities of investments intended to maintain safety and liquidity. Concentration of credit risk with respect to accounts receivable is limited due to a large and diverse customer base, which is dispersed over different geographic areas. Allowances are maintained for potential credit losses and such losses have historically been within expected ranges.

Foreign Currency Translation

Our reporting currency is the U.S. dollar and the functional currencies of our subsidiaries are generally the local currency of the respective countries in which they are headquartered. All amounts in the financial statements of entities whose functional currency is not the U.S. dollar are translated into U.S. dollar equivalents at exchange rates as follows: (1) assets and liabilities at period-end rates, (2) income statement accounts at average exchange rates for the period, and (3) components of equity at historical rates. Translation gains or losses are recorded in equity, and transaction gains and losses are reflected in net income as a component of other income, net. Realized gains or losses on the value of derivative contracts entered into to hedge the exchange rate exposure of receivables and payables are also included in net income as a component of other income, net. The net gain or loss on foreign currency transactions was a net gain of $2.7 million in 2022, a net loss of $9.0 million in 2021, and a net loss of $4.1 million in 2020, and is included in other income, net.

The exchange rates of key currencies were as follows:

	Closing rate at December 31,		Annual average rate		
(US$ equivalent for one)	**2022**	2021	**2022**	2021	2020
Euro (EUR)	1.0666	1.1326	1.0542	1.1832	1.1411
Pound Sterling (GBP)	1.2026	1.3479	1.2376	1.3758	1.2836
Swiss Franc (CHF)	1.0832	1.0963	1.0486	1.0940	1.0659
Australian Dollar (AUD)	0.6797	0.7253	0.6952	0.7514	0.6905
Canadian Dollar (CAD)	0.7386	0.7869	0.7692	0.7977	0.7463
Japanese Yen (JPY)	0.0076	0.0087	0.0077	0.0091	0.0094
Chinese Yuan (CNY)	0.1450	0.1574	0.1489	0.1550	0.1450

Segment Information

We determined that we operate as one operating segment in accordance with the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) Topic 280, Segment Reporting. Our chief operating decision maker (CODM) makes decisions based on the Company as a whole. In addition, we have a common basis of organization and types of products and services which derive revenues and consistent product margins. Accordingly, we operate and make decisions as one reporting unit.

Revenue Recognition

We recognize revenue when control of promised goods or services transfers to our customers in an amount that reflects the consideration that is expected to be received in exchange for those goods or services. The majority of our sales revenue is recognized when products are shipped to the customers at which point control transfers.

Warranty

We provide warranties on our products against defects in materials and workmanship for a period of one year. A provision for estimated future warranty costs is recorded in cost of sales at the time product revenue is recognized. Product warranty obligations are included in accrued and other current liabilities in the accompanying consolidated balance sheets.

Research and Development

Research and product development costs are expensed as incurred. Research and development expenses consist primarily of salaries and related expenses, facility costs, and amounts paid to contract research organizations and laboratories for the provision of services and materials as well as costs for internal use or clinical trials.

Government Grants

We recognize government grants when there is reasonable assurance that all conditions will be complied with and the grant will be received. Our government grants generally represent subsidies for specified activities and are therefore recognized when earned as a reduction of the expenses recorded for the activity

that the grants are intended to compensate. Thus, when the grant relates to research and development expense, the grant is recognized over the same period that the related costs are incurred. Otherwise, amounts received under government grants are recorded as liabilities in the balance sheet. When the grant relates to an asset, the nominal amount of the grant is deducted from the carrying amount of the asset and recognized over the same period that the related asset is depreciated.

Borrowing Costs

Borrowing costs directly attributable to the acquisition, construction or production of an asset that takes a substantial period of time to get ready for its intended use or sale are capitalized as part of the cost of the respective assets (qualifying asset) when such borrowing costs are significant. All other borrowing costs are expensed in the period they occur.

Shipping and Handling Income and Costs

Shipping and handling costs charged to customers are recorded as revenue in the period that the related product sale revenue is recorded. Associated costs of shipping and handling are included in sales and marketing expenses. For the years ended December 31, 2022, 2021 and 2020, shipping and handling costs totaled $34.4 million, $31.7 million and $32.1 million, respectively.

Advertising Costs

The costs of advertising are expensed as incurred and are included as a component of sales and marketing expense. Advertising costs for the years ended December 31, 2022, 2021 and 2020 were $15.8 million, $13.5 million and $9.5 million, respectively.

General and Administrative

General and administrative expenses primarily represent the costs required to support administrative infrastructure. These costs include licensing costs in connection with continued investments in information technology improvements, including cyber security, across the organization as well as personnel in administrative functions.

Restructuring, Acquisition, Integration and Other

We incur indirect acquisition and business integration costs in connection with business combinations which are expensed when incurred. These costs represent incremental costs that we believe would not have been incurred absent the business combinations. Major components of these costs include consulting and related fees incurred to integrate or restructure the acquired operations, payroll and related costs for employees remaining with the Company on a transitional basis and public relations, advertising and media costs for re-branding of the combined organization.

Restructuring costs include personnel costs (principally termination benefits) as well as contract and other costs, primarily contract termination costs. Termination benefits are accounted for in accordance with FASB ASC Topic 712, Compensation - Nonretirement Postemployment Benefits, and are recorded when it is probable that employees will be entitled to benefits and the amounts can be reasonably estimated. Estimates of termination benefits are based on the frequency of past termination benefits, the similarity of benefits under the current plan and prior plans, and the existence of statutory required minimum benefits. Contract and other costs are accounted for in accordance with FASB ASC Topic 420, Exit or Disposal Cost Obligations and are recorded when the liability is incurred. The specific restructuring measures and associated estimated costs are based on management's best business judgment under the existing circumstances at the time the estimates are made. If future events require changes to these estimates, such adjustments will be reflected in the period of the revised estimate.

On March 3, 2020, QIAGEN and Thermo Fisher Scientific Inc. (NYSE: TMO) announced that their boards of directors, as well as the Managing Board of QIAGEN N.V., unanimously approved Thermo Fisher's proposal to acquire QIAGEN. On August 13, 2020, QIAGEN announced that Thermo Fisher did not achieve the minimum 66.67% acceptance threshold from QIAGEN shareholders. For the year ended December 31, 2020, we incurred related expenses of $125.5 million, which includes the $95.0 million expense reimbursement which was paid when the minimum acceptance threshold was not met. These costs are recorded within restructuring, acquisition, integration and other, net in the accompanying consolidated statement of income.

Income Taxes

We account for income taxes under the liability method. Under this method, total income tax expense is the amount of income taxes expected to be payable for the current year plus the change from the beginning of the year for deferred tax assets and liabilities established for the expected future tax consequences resulting from differences between the financial statement carrying amount and the tax basis of assets and liabilities. Deferred tax assets and/or liabilities are determined by multiplying the differences between the financial statement carrying amount and the tax bases of assets and liabilities by the enacted tax rates expected to be in effect when such differences are reversed or settled. Deferred tax assets are reduced by a valuation allowance to the amount more likely than not to be realized. The effect on deferred taxes of a change in tax rates is recognized in income in the period that includes the enactment date.

Tax benefits are initially recognized in the financial statements when it is more likely than not that the position will be sustained upon examination by the taxing authorities. Such tax positions are initially and subsequently measured as the largest amount of tax benefit that is greater than 50 percent likely of being realized upon settlement with the taxing authority using the cumulative probability method, assuming the taxing authority has full knowledge of the position and all relevant facts. Our policy is to recognize interest accrued related to unrecognized tax benefits in interest expense and penalties related to income taxes within the income tax expense.

Derivative Instruments

We enter into derivative financial instrument contracts to minimize the variability of cash flows or income statement impact associated with the anticipated transactions being hedged or to hedge fluctuating interest rates. As changes in foreign currencies or interest rates impact the value of anticipated transactions, the fair value of the forward or swap contracts also changes, offsetting foreign currency or interest rate fluctuations. Derivative instruments are recorded on the balance sheet at fair value. Changes in fair value of derivatives are recorded in current earnings or other comprehensive income, depending on whether a derivative is designated as part of a hedge transaction.

Share-Based Payments

Compensation cost for all share-based payments is recorded based on the grant date fair value, less an estimate for pre-vesting forfeitures, recognized in expense over the service period using an accelerated method.

Forfeiture Rate - This is the estimated percentage of grants that are expected to be forfeited or canceled on an annual basis before becoming fully vested. We estimated the forfeiture rate based on historical forfeiture experience.

Restricted Stock Units and Performance Stock Units - Restricted stock units and performance stock units represent rights to receive Common Shares at a future date. The fair market value of restricted and performance stock units is determined based on the number of stock units granted and the fair market value of our shares on the grant date. The fair market value at the time of the grant, less an estimate for pre-vesting forfeitures, is recognized in expense over the vesting period. At each reporting period, the estimated performance achievement of the performance stock units is assessed and any change in the estimated achievement is recorded on a cumulative basis in the period of adjustment.

Cash and Cash Equivalents

Cash and cash equivalents consist of cash on deposit in banks and other cash invested temporarily in various instruments that are short-term and highly liquid, and having an original maturity of less than three months at the date of purchase. Cash equivalents are carried at amortized cost which approximates fair value. Cash and cash equivalents as of December 31, 2022 and 2021 were as follows:

(in thousands)	**2022**	2021
Cash at bank and on hand	$122,314	$235,381
Money market funds	289,394	366,117
Commercial paper	94,828	179,844
Short-term bank deposits	224,133	99,174
Cash and cash equivalents	**$730,669**	**$880,516**

Short-Term Investments

Short-term investments include cash investments with original maturities of more than three months which are classified as "available for sale" and stated at fair value, which is equivalent to the amortized cost, in the accompanying consolidated balance sheet. Interest income is accrued when earned and changes in fair market values are reflected in other income, net. The amortization of premiums and accretion of discounts to maturity arising from acquisition is included in interest income. A decline in fair value that is judged to be other-than-temporary is accounted for as a realized loss and the write-down is included in the consolidated statements of income. Realized gains and losses, determined on a specific identification basis on the sale of short-term investments, are included in income.

Short-term investments consisting of marketable equity securities are reported at fair value with gains and losses recorded in earnings.

Fair Value of Financial Instruments

The carrying amount of cash and cash equivalents, notes receivable, accounts receivable, accounts payable and accrued liabilities approximate their fair values because of the short maturities of those instruments. The carrying value of our variable rate debt and leases approximates their fair values because of the short maturities and/or interest rates which are comparable to those available to us on similar terms. The fair values of the zero coupon convertible debt and the Cash Convertible Notes are based on an estimation using available over-the-counter market information. The fair values of the U.S. Private Placement were estimated using the changes in the U.S. Treasury rates and the fair value of the German Private Placement is based on an estimation using changes in the euro swap rates.

Accounts Receivable, Loans and Other Receivables and Allowance for Credit Losses

Our accounts receivable consist of unsecured customer obligations and we are at risk to the extent such amounts become uncollectible. Since January 1, 2020, we maintain allowances for credit losses resulting from the expected failure or inability of our customers to make required payments. We recognize the allowance for expected credit losses at inception and reassess regularly considering historical experience with bad debts, the aging of the receivables, credit quality of the customer base, current economic conditions and other reasonable and supportable expectations for future conditions, if applicable. Once a receivable is determined to be uncollectible, the balance is charged against the allowance.

We sell our products worldwide through sales subsidiaries and distributors. There is no concentration of credit risk with respect to trade accounts receivable as we have a large number of internationally dispersed customers. Trade accounts receivable are non-interest bearing and mostly have payment terms of 30-90 days. For all years presented, no single customer represented more than ten percent of accounts receivable or consolidated net sales.

Following the adoption of Topic 326, we are required to use the new forward-looking expected credit loss model that replaced the previous incurred credit loss model. The new model generally results in earlier recognition of allowances for credit losses and requires consideration of a broader range of information to estimate expected credit losses over the entire lifetime of the assets. Accordingly, with the adoption of Topic 326, we recorded allowances for credit losses of $8.1 million for accounts receivable, $10.2 million for other receivables and $1.3 million for loan receivables. The allowances reflect the forward-looking expected impact of non-payment of the contractual amounts due.

The changes in the allowance for credit losses on accounts receivable and loans and other receivables for the years ended December 31, 2022 and 2021 and in the allowance for doubtful accounts for the year December 31, 2020 are as follows:

	Accounts Receivable			Loans and Other Receivables		
(in thousands)	**2022**	**2021**	**2020**	**2022**	**2021**	**2020**
Balance at beginning of year	$23,124	$27,052	$12,115	$5,142	$9,132	$—
ASC 326 adoption impact	—	—	8,089	—	—	11,543
Provisions for expected credit losses	4,483	18	16,439	5,574	2,155	1,325
Deductions from allowance	(2,685)	(1,249)	(9,868)	—	(6,049)	(3,916)
Recoveries collected	—	288	—	—	12	—
Currency translation adjustments and other	(2,042)	(2,985)	277	(118)	(108)	180
Balance at end of year	**$22,880**	**$23,124**	**$27,052**	**$10,598**	**$5,142**	**$9,132**

In 2020, the additions charged to expense include forward-looking expected impacts of the global economic uncertainty caused by COVID-19.

Inventories

Inventories are stated at the lower of cost or net realizable value, determined on either a weighted average cost basis or a standard cost basis which is regularly adjusted to actual. Inventories include material, direct labor and overhead costs and are reduced for estimated obsolescence. Inventories consisted of the following as of December 31, 2022 and 2021:

(in thousands)	**2022**	2021
Raw materials	$97,613	$94,748
Work in process	85,488	67,679
Finished goods	174,859	165,098
Total inventories, net	**$357,960**	**$327,525**

Property, Plant and Equipment

Property, plant and equipment are stated at cost less accumulated amortization. Capitalized internal-use software costs include only those direct costs associated with the actual development or acquisition of computer software solely to meet internal needs and cloud-based applications to deliver our service and comprise costs associated with the design, coding, installation and testing of the system. Costs associated with preliminary development, such as the evaluation and selection of alternatives, as well as training, maintenance and support are expensed as incurred. Costs for software to be sold, leased or otherwise marketed that are related to the conceptual formulation and design are expensed as incurred. Costs incurred to produce software products and the software components of products to be sold, leased or marketed after technological feasibility is established are capitalized and amortized in accordance with the accounting standards for the costs of software to be sold, leased, or otherwise marketed. All other depreciation is computed using the straight-line method over the estimated useful lives of the assets (3 to 40 years). Amortization of leasehold improvements is computed on a straight-line basis over the lesser of the remaining life of the lease or the estimated useful life of the improvement asset. We have a policy of capitalizing expenditures that materially increase assets' useful lives and charging ordinary maintenance and repairs to operations as incurred. When property or equipment is disposed of, the cost and related accumulated depreciation and amortization are removed from the accounts and any gain or loss is included in earnings.

Business Combinations

We include the results of operations of the businesses that we acquire as of the acquisition date. The purchase price of an acquired business is allocated to the individual assets acquired and liabilities assumed based on their fair values at the date of acquisition. Those fair values are determined using income, cost and market approaches, most of which depend upon significant inputs that are not observable in the market, or level 3 measurements. The excess of purchase price over the fair value of identifiable assets acquired and liabilities assumed is recorded as goodwill. Acquisition-related expenses are recognized separately from the business combinations and are expensed as incurred.

The purchase price for some business combinations includes consideration that is contingent on the achievement of net sales or earnings targets by the acquired business. Contingent consideration is measured initially and on a recurring basis at fair value. Payments to settle the acquisition-date fair value of contingent consideration are presented as financing activities on the statement of cash flows; any payments in excess of the acquisition-date fair value are presented as operating activities.

Acquired Intangibles and Goodwill

Acquired intangibles with alternative future uses are carried at cost less accumulated amortization and consist of licenses to technology held by third parties and other acquired intangible assets. Amortization related to patents are computed over the estimated useful life of the underlying patent, which has historically ranged from 1 to 20 years. Purchased intangible assets acquired in business combinations, other than goodwill, are amortized over their estimated useful lives unless these lives are determined to be indefinite. Intangibles are assessed for recoverability considering the contract life and the period of time over which the intangible will contribute to future cash flow. The unamortized cost of intangible assets, where cash flows are independent and identifiable from other assets, is evaluated periodically and adjusted, if necessary, if events and circumstances indicate that a decline in value below the carrying amount has occurred.

Amortization expense related to developed technology and patent and license rights which have been acquired in a business combination is included in cost of sales. Amortization of trademarks, customer base and non-compete agreements which have been acquired in a business combination is recorded in operating expense under the caption 'acquisition-related intangible amortization'. Amortization expenses of intangible assets not acquired in a business combination are recorded within either the cost of sales, research and development or sales and marketing line items based on the use of the asset.

We dispose the gross carrying amount and accumulated amortization of fully amortized intangible assets from historic business combinations once they are considered fully integrated into our business.

The fair value of in-process research and development (IPR&D) acquired in a business combination is capitalized as an indefinite-lived intangible asset until completion or abandonment of the related research and development activities. IPR&D is tested for impairment annually or when any event or circumstance indicates that the fair value may be below the carrying value. If and when research and development is complete, the associated asset is amortized over the estimated useful life.

Goodwill represents the difference between the purchase price and the estimated fair value of the net assets acquired arising from business combinations. Goodwill is subject to impairment tests annually or earlier if indicators of potential impairment exist. We have elected to perform our annual test for indications of impairment as of October 1st of each year. Following the annual impairment tests for the years ended December 31, 2022, 2021 and 2020, goodwill has not been impaired.

Non-Marketable Investments

We have investments in non-marketable equity securities issued by privately held companies. These investments are included in other long-term assets in the accompanying consolidated balance sheets. Non-marketable investments through which we exercise significant influence but do not have control are accounted for using the equity method. We monitor for changes in circumstances that may require a reassessment of the level of influence. Our non-marketable equity securities not accounted for under the equity method are accounted for under the measurement alternative. Under the measurement alternative, the carrying value is measured at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments of the same issuer. Adjustments are determined primarily based on a market approach as of the transaction date.

Investments are evaluated periodically, or when impairment indicators are noted, to determine if declines in value are other-than-temporary. In making that determination, we consider all available evidence relating to the realizable value of a security. This evidence includes, but is not limited to, the following:

- adverse financial conditions of a specific issuer, segment, industry, region or other variables;
- the length of time and the extent to which the fair value has been less than cost; and
- the financial condition and near-term prospects of the issuer.

We consider whether the fair values of any of our non-marketable investments have declined below their carrying value whenever adverse events or changes in circumstances indicate that recorded values may not be recoverable. If any such decline is considered to be other than temporary (based on various factors, including historical financial results, product development activities and the overall health of the affiliate's industry), then a write-down of the investment would be recorded in operating expense to its estimated fair value. Investment impairments recorded during the year ended December 31, 2020 is discussed in Note 10 "Investments".

Variable Interest Entities

We evaluate at the inception of each arrangement whether we have made an investment in an entity that is considered a variable interest entity (VIE) or if we hold other variable interests in an arrangement that is considered a variable interest entity. We consolidate VIEs when we are the primary beneficiary. The primary beneficiary of a VIE is the party that meets both of the following criteria: (1) has the power to make decisions that most significantly affect the economic performance of the VIE; and (2) has the obligation to absorb losses or the right to receive benefits that in either case could potentially be significant to the VIE. Periodically, we assess whether any changes in our interest or relationship with the entity affect our determination of whether the entity is still a VIE and, if so, whether we are the primary beneficiary. If we are not the primary beneficiary in a VIE, we account for the investment or other variable interests in a VIE as an investment in a non-marketable investment or in accordance with other applicable GAAP.

Impairment of Long-Lived Assets

We review our long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset or a group of assets may not be recoverable. We consider, amongst other indicators, a history of operating losses or a change in expected sales levels to be indicators of potential impairment. Assets are grouped and evaluated for impairment at the lowest level for which there are identifiable cash flows that are largely independent of the cash flows of other groups of assets. If an asset is determined to be impaired, the loss is measured as the amount by which the carrying amount of the asset exceeds fair value which is determined by applicable market prices, when available. When market prices are not available, we generally measure fair value by discounting projected future cash flows of the asset. Considerable judgment is necessary to estimate discounted future cash flows. Accordingly, actual results could differ from such estimates.

4. Revenue

Nature of Goods and Services

Our revenues are reported net of sales and value added taxes and accruals for estimated rebates and returns and are derived primarily from the sale of consumable and instrumentation products, and to a much lesser extent, from the sale of services, intellectual property and technology. Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration we expect to receive in exchange for those products or services. We enter into contracts that can include various combinations of products and services, which are generally distinct and accounted for as separate performance obligations. The transaction price is allocated to performance obligations based on their relative stand-alone selling prices.

We offer warranties on our products. Certain of our warranties are assurance-type in nature and do not cover anything beyond ensuring that the product is functioning as intended. Based on the guidance in Topic 606, assurance-type warranties do not represent separate performance obligations. The Company also sells separately-priced service contracts which qualify as service-type warranties and represent separate performance obligations.

We sell our products and services both directly to customers and through distributors generally under agreements with payment terms typically less than 90 days and in most cases not exceeding one year and therefore contracts do not contain a significant financing component.

Consumable and Related Revenue

Consumable Products: In the last three years, revenue from consumable product sales has accounted for approximately 80-81% of our net sales and revenue is recognized when performance obligations under the terms of a contract with a customer are satisfied. The majority of our contracts have either a single performance obligation to transfer a single consumable product or multiple performance obligations to transfer multiple products concurrently. Accordingly, we recognize revenue when control of the products has transferred to the customer, which is generally at the time of shipment of products as this is

when title and risk of loss have been transferred. In addition, invoicing typically occurs at this time so this is when we have a present right to payment. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring products and is generally based upon a negotiated formula, list or fixed price.

Related Revenue: Revenues from related products include software-as-a-service (SaaS), licenses, intellectual property and patent sales, royalties and milestone payments and over the last three years has accounted for approximately 6-8% of our net sales.

SaaS arrangements: Revenue from SaaS arrangements, which allow customers to use hosted software over the contract period without taking possession of the software, is recognized over the duration of the agreement unless the terms of the agreement indicate that revenue should be recognized in a different pattern, for example based on usage.

Licenses: Licenses for on-site software, which allow customers to use the software as it exists when made available, are sold as perpetual licenses or term licenses. Revenue from on-site licenses is recognized upfront at the point in time at the later of when the software is made available to the customer and the beginning of the license term. When a portion of the transaction price is allocated to a performance obligation to provide support and/or updates, revenue is recognized as the updates/support are provided, generally over the life of the license. Fees from research collaborations include payments for technology transfer and access rights. Royalties from licensees of intellectual property are based on sales of licensed products and revenues are recognized at the later of (i) when the related sales occur, or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied).

Milestone Payments: At the inception of each companion diagnostic co-development arrangement that includes development milestone payments, which represent variable consideration, we evaluate whether the milestones are probable of being reached and estimate the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within our control, such as milestones which are achieved through regulatory approvals, are considered to be constrained and excluded from the transaction price until those approvals are received. Revenue is recognized following the input method as this is considered to best depict the timing of the transfer of control. This involves measuring actual hours incurred to date as a proportion of the total budgeted hours of the project. At the end of each subsequent reporting period, the proportion of completion is trued-up. We also re-evaluate the probability of achievement of development milestones and any related constraint on a periodic basis, and if necessary, adjust our estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect revenues and earnings in the period of adjustment.

Instruments

Revenue from instrumentation includes the instrumentation equipment, installation, training and other instrumentation services, such as extended warranty services or product maintenance contracts and over the last three years has accounted for approximately 12-14% of net sales. Revenue from instrumentation equipment is recognized when the customer obtains control of the instrument which is predominantly at the time of delivery or when title has transferred to the customer. Service revenue is recognized over the term of the service period as the customers benefit from the service throughout the service period. Revenue related to services performed on a time-and-materials basis is recognized when performed.

Contract Estimates

The majority of our revenue is derived from contracts (i) with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount in which we have the right to invoice as product is delivered. We have elected the practical expedient not to disclose the value of remaining performance obligations associated with these types of contracts.

However, we have certain companion diagnostic co-development contracts to provide research and development activities in which our performance obligations extend over multiple years. As of December 31, 2022, we had $54.5 million of remaining performance obligations for which the transaction price is not constrained related to these contracts which we expect to recognize over the next 12 to 18 months.

Revenue expected to be recognized in any future year related to remaining performance obligations, excluding revenue pertaining to contracts that have an original expected duration of one year or less, contracts where revenue is recognized as invoiced and contracts with variable consideration related to undelivered performance obligations, is not material.

Contract Balances

The timing of revenue recognition, billings and cash collections can result in billed accounts receivable, unbilled receivables (contract assets), and customer advances and deposits (contract liabilities) in the consolidated balance sheet.

Contract assets as of December 31, 2022 and 2021 totaled $9.8 million and $14.1 million, respectively, and are included in prepaid expenses and other current assets in the accompanying consolidated balance sheets and relate to the companion diagnostic co-development contracts discussed above.

Contract liabilities primarily relate to non-cancellable advances or deposits received from customers before revenue is recognized and is primarily related to instrument service and Software as a Service (SaaS) arrangements. As of December 31, 2022 and 2021, contract liabilities totaled $84.2 million and $74.7 million, respectively, of which $69.0 million and $63.4 million is included in accrued and other current liabilities, respectively, and $15.2 million and $11.3 million in included in other long-term liabilities, respectively. During the years ended December 31, 2022 and 2021, we satisfied the associated performance obligations and recognized revenue of $57.6 million and $54.9 million, respectively, related to advance customer payments previously received.

Disaggregation of Revenue

We disaggregate our revenue based on product type and customer class as shown in the tables below for the years ended December 31, 2022, 2021 and 2020:

(in thousands)	**2022**	2021	2020
Consumables and related revenues	$1,029,791	$1,027,215	$774,234
Instruments	96,436	116,449	129,742
Molecular Diagnostics	1,126,227	1,143,664	903,976
Consumables and related revenues	859,133	959,093	841,201
Instruments	156,158	148,900	125,169
Life Sciences	1,015,291	1,107,993	966,370
Total	**$2,141,518**	**$2,251,657**	**$1,870,346**

Additionally, we disaggregate our revenue based on the product categories as shown in the tables below for the years ended December 31, 2022, 2021 and 2020:

(in thousands)	**2022**	2021	2020
Sample technologies	$796,932	$850,636	$803,867
Diagnostic solutions	660,879	638,759	460,757
PCR / Nucleic acid amplification	390,804	433,972	363,552
Genomics / NGS	224,797	245,066	165,570
Other	68,106	83,224	76,600
Total	**$2,141,518**	**$2,251,657**	**$1,870,346**

Refer to Note 21 "Segment Information" for disclosure of revenue by geographic region.

5. Acquisitions

Business Combinations and Asset Acquisitions

For acquisitions which have been accounted for as business combinations, the acquired companies' results have been included in the accompanying consolidated statements of income from their respective dates of acquisition. Our acquisitions have historically been made at prices above the fair value of the acquired net assets, resulting in goodwill, due to expectations of synergies of combining the businesses. These synergies include use of our existing infrastructure, such as sales force, business service centers, distribution channels and customer relations, to expand sales of an acquired business' products; use of the infrastructure of the acquired businesses to cost-effectively expand sales of our products; and elimination of duplicative facilities, functions and staffing.

If the acquired net assets do not constitute a business under the acquisition method of accounting, the transaction is accounted for as an asset acquisition and no goodwill is recognized. In an asset acquisition, the amount allocated to acquired in-process research and development with no alternative future use is charged to expense at the acquisition date.

2023 Business Combinations

On January 3, 2023, we acquired Verogen, Inc., a leader in the use of next-generation sequencing (NGS) technologies to drive the future of human identification (HID) and forensic investigation. Verogen, a privately held company founded in 2017 and based in San Diego, California, supports the global human identification community with NGS tools and professional services to help resolve criminal and missing-persons cases. The cash consideration was $150.0 million, subject to adjustment. The acquisition is not significant to the overall consolidated financial statements.

2022 Business Combinations

In May 2022, we acquired BLIRT S.A., a supplier of standardized and customized solutions for proteins and enzymes as well as molecular biology reagents located in Gdańsk, Poland. Its offering includes proteins and enzymes that are critical to the life sciences industry and diagnostic kit manufacturers. The cash consideration, net of cash acquired was $63.7 million. The acquisition was not significant to the overall consolidated financial statements and as of December 31, 2022, the allocation of the purchase price was preliminary. At the acquisition date, all the assets acquired and liabilities assumed were recorded at their respective fair values and our consolidated results of operations include the operating results from the acquired company from the acquisition date. The acquisition did not have a material impact to net sales, net income or earnings per share and therefore no pro forma information has been provided herein.

2020 Business Combinations

On September 17, 2020, we completed the acquisition of the remaining 80.1% of NeuMoDx Molecular, Inc. (NeuMoDx) shares, a privately-held U.S. company in which we held a minority interest. NeuMoDx designs and develops molecular diagnostics solutions for hospital and clinical reference laboratories. Prior to acquisition, we held a 19.9% investment in NeuMoDx with a carrying value of $41.0 million. The cash consideration for the remaining shares totaled $251.7 million. We incurred $2.5 million acquisition related costs to effect the business combination, of which $1.8 million was incurred during the year ended December 31, 2020, and are included in restructuring, acquisition, integration and other, net.

The acquisition date fair value of the minority interest investment was $52.7 million and a gain of $11.7 million was recorded in restructuring, acquisition, integration and other, net in the accompanying consolidated statement of income for the year ended December 31, 2020. The fair value of the minority interest investment was determined using an implied purchase price reduced by a 20% control premium.

The final purchase price allocation differed from the preliminary purchase price allocation primarily as a result of updates to the acquisition date value of the liability related to acquired litigation, the final valuation and allocation of amounts among the acquired intangible assets as set forth in an independent appraisal, and related deferred tax impacts as follows:

(in thousands)	**Final**	Preliminary [1]	Difference
Purchase Price:			
Cash consideration	$251,730	$251,730	$—
Fair value of minority interest	52,727	52,727	—
	$304,457	**$304,457**	**$—**
Net Assets Acquired:			
Cash and cash equivalents	$12,291	$12,291	$—
Accounts receivable	5,691	5,691	—
Inventories	20,271	18,866	1,405
Prepaid expenses and other current assets	5,961	5,943	18
Accounts payable	(12,450)	(11,168)	(1,282)
Accruals and other current liabilities	(69,585)	(18,770)	(50,815)
Other long-term liabilities	(4,101)	(4,101)	—
Fixed and other long-term assets	7,076	6,698	378
Developed technology	101,000	119,100	(18,100)
In-process research and development	55,000	64,800	(9,800)
Patents and license rights	770	770	—
Customer backlog	400	900	(500)
Goodwill	191,343	149,877	41,466
Deferred tax asset	30,057	—	30,057
Deferred tax liability on fair value of identifiable intangible assets acquired	(39,267)	(46,440)	7,173
Total	**$304,457**	**$304,457**	**$—**

[1] As of September 30, 2020.

The final purchase price allocation includes $55.0 million for the acquisition date value of the liability related to acquired litigation. The final settlement amount, discussed further in Note 20 "Commitments and Contingencies" was $53.0 million. The $2.0 million difference between the final purchase price allocation and final settlement amount was recorded to restructuring, acquisition, integration and other expense, net in the year ended December 31, 2021. The in-process research and development recognized relates to technologies that remain in development and have not yet obtained regulatory approvals. The technologies within in-process research and development are expected to be completed within the next four years. The weighted average amortization period for the acquired intangibles is 10 years. The goodwill acquired is not deductible for tax purposes.

Pro forma results

The following unaudited pro forma information assumes that the above acquisition occurred at the beginning of the periods presented. For the year ended December 31, 2020, pro forma net sales would have been $1.90 billion, pro forma net income would have been $347.0 million and pro forma diluted net income per common share would have been $1.48. These unaudited pro forma results are intended for informational purposes only and are not necessarily indicative of the results of operations that would have occurred had the acquisition been in effect at the beginning of the periods presented, or of future results of the combined operations.

6. Restructuring

As part of our restructuring activities, we incur expenses that qualify as exit and disposal costs under U.S. GAAP including severance and employee costs as well as contract and other costs, primarily contract termination costs, as well as inventory write-offs and other implementation costs primarily related to consulting fees. Personnel related costs primarily relate to cash severance and other termination benefits including accelerated share-based compensation. We also incur expenses that are an integral component of, and are directly attributable to, our restructuring activities which do not qualify as exit and disposal costs under U.S. GAAP, which consist of asset-related costs such as intangible asset impairments and other asset related write-offs.

Personnel costs are primarily determined based on established benefit arrangements, local statutory requirements, or historical benefit practices. We recognize these benefits when payment is probable and estimable. Other benefits which require future service and are associated to non-recurring benefits are recognized ratably over the future service period. Other assets, including inventory, are impaired or written-off if the carrying value exceeds the fair value. All other costs are recognized as incurred.

2022 Restructuring

During the fourth quarter of 2022, we initiated a restructuring plan to discontinue our third-party instrument service business and realign certain management positions in order to improve the overall management structure. The total pre-tax costs are expected to total approximately $8.0 million, of which $5.0 million was incurred during the fourth quarter of 2022 and included $0.4 million recorded in cost of sales related to inventory write downs together with $4.1 million in personnel related costs, $0.5 million in consulting and other costs expensed to restructuring, acquisition, integration and other, net in the accompanying consolidated statement of income.

Of the total cost incurred, $4.6 million remains accrued as of December 31, 2022 in accrued and other current liabilities in the accompanying consolidated balance sheet as summarized in the following table for the restructuring activity:

(in thousands)	Personnel Related	Contract and Other Costs	Total
Cost incurred in 2022	$4,121	$491	$4,612
Foreign currency translation adjustment	24	3	27
Liability at December 31, 2022	**$4,145**	**$494**	**$4,639**

Future pre-tax costs of approximately $3.0 million are expected to be incurred in 2023 primarily are related to personnel and contract termination costs. The plan is expected to be completed by the end of 2023.

7. Short-Term Investments

As of December 31, 2022 and 2021, short-term investments were as follows:

(in thousands)	2022	2021
Commercial paper	$672,597	$139,785
Money market deposits	15,000	45,000
Total	**$687,597**	**$184,785**

At December 31, 2022 and 2021, we had $687.6 million and $184.8 million, respectively, of commercial paper and money market deposits due from financial and nonfinancial institutions. Short-term investments are highly liquid deposits and fixed-income securities denominated in U.S. dollars. Investments in commercial paper, a marketable debt security, are classified as available for sale investments and are carried at amortized cost, which approximates fair market value. Interest income is calculated and accrued using the effective interest method. Money market deposits are interest-bearing deposit accounts, valued

at cost with interest income accrued as earned. All instruments are classified as current assets in the accompanying balance sheet as they have an original maturity of less than one year. Interest income is determined using the effective interest rate method.

8. Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets are summarized as follows as of December 31, 2022 and 2021:

(in thousands)	Notes	2022	2021
Fair value of derivative instruments	(14)	$111,617	$175,284
Income tax receivable	(17)	53,394	45,116
Prepaid expenses		50,958	60,629
Value added tax		28,130	22,884
Cash collateral	(14)	21,083	11,200
Other receivables		18,997	19,201
Contract assets	(4)	9,768	14,082
Loan receivables		29	6,249
Total prepaid expenses and other current assets		**$293,976**	**$354,645**

9. Property, Plant and Equipment

Property, plant and equipment of December 31, 2022 and 2021 were as follows:

(in thousands)	Estimated useful life (in years)	2022	2021
Land	—	$25,480	$26,732
Buildings and improvements	5-40	362,794	371,834
Machinery and equipment	3-10	294,156	343,968
Computer software	3-20	262,007	281,226
Furniture and office equipment	3-10	90,293	106,016
Construction in progress	—	130,407	140,823
		1,165,137	1,270,599
Less: Accumulated depreciation and amortization		(502,967)	(632,416)
Property, plant and equipment, net		**$662,170**	**$638,183**

For the years ended December 31, 2022, 2021 and 2020 depreciation and amortization expense totaled $89.5 million, $85.4 million and $78.6 million, respectively. For the years ended December 31, 2022, 2021 and 2020 amortization related to computer software to be sold, leased or marketed totaled $10.8 million, $9.2 million and $7.4 million, respectively. As of December 31, 2022 and 2021, the unamortized balance of computer software to be sold, leased or marketed was $69.2 million and $56.9 million, respectively.

Repairs and maintenance expense was $16.8 million, $16.2 million and $13.8 million in 2022, 2021 and 2020, respectively. For the year ended December 31, 2022, construction in progress primarily includes amounts related to projects to expand production lines and increase capacity of manufacturing

as well as ongoing software development projects. For the years ended December 31, 2022, 2021 and 2020, interest capitalized in connection with construction projects was not significant.

10. Investments

Non-Marketable Investments

We have made strategic investments in certain privately-held companies without readily determinable market values.

Non-Marketable Investments Accounted for Under the Equity Method

A summary of our non-marketable investments accounted for as equity method investments is as follows:

(in thousands)	Ownership Percentage	Equity investments as of December 31,		Share of income (loss) for the years ended December 31,		
		2022	2021	**2022**	2021	2020
PreAnalytiX GmbH	50.00 %	$6,856	$10,291	$4,377	$10,412	$3,070
Apis Assay Technologies Ltd	19.00 %	4,102	3,713	389	1,773	1,221
TVM Life Science Ventures III	3.10 %	3,872	3,669	(901)	(264)	630
Suzhou Fuda Business Management and Consulting Partnership	33.67 %	2,608	2,832	—	—	—
Actome GmbH	12.50 %	779	1,045	(201)	(31)	—
Hombrechtikon Systems Engineering AG	19.00 %	(311)	(413)	94	97	97
		$17,906	**$21,137**	**$3,758**	**$11,987**	**$5,018**

Of the $17.9 million of non-marketable investments accounted for as equity method investments, $18.2 million is included in other long-term assets and $0.3 million, where we are committed to fund losses, is included in other long-term liabilities in the accompanying consolidated balance sheet as of December 31, 2022.

During 2021, we made a $1.1 million investment in Actome GmbH (Actome) and as of December 31, 2022, we hold a 12.5% ownership stake in this company that is accounted for under the equity method as we have the ability to exercise significant influence.

TVM Life Science Ventures III (TVM) is a limited partnership and we account for our 3.1% investment under the equity method as we have the ability to exercise significant influence over the limited partnership. This investment is valued at net asset value (NAV) reported by the counterparty, adjusted as necessary. During the years ended December 31, 2022 and 2021, we made $1.1 million and $2.4 million, respectively in additional cash payments to TVM and have $9.2 million of unfunded commitments through 2029 related to this investment. We do not have the right to redeem these funds under the normal course of operations of this partnership.

During the years ended December 31, 2022, 2021 and 2020, we received dividends of $7.5 million, $4.7 million and $4.4 million, respectively, from PreAnalytix GmbH. These dividends are included in other items, net including fair value changes in derivatives in the accompanying consolidated statements of cash flows as they are a return on investment and therefore classified as cash flows from operating activities.

As of December 31, 2022, four of our equity method investments are variable interest entities and we are not the primary beneficiary as we do not hold the power to direct the activities that most significantly impact the economic performance. Therefore, these investments are not consolidated. As of December 31, 2022, these investments had a total net carrying value of $8.4 million, of which $8.7 million, representing our maximum exposure to loss, is included in other long-term assets and $0.3 million is included in other long-term liabilities in the accompanying consolidated balance sheet. As of December 31, 2021, these investments held a balance of $8.0 million, of which $8.4 million is included in other long-term assets and $0.4 million is included in other long-term liabilities in the accompanying consolidated balance sheet.

Non-Marketable Investments Not Accounted for Under the Equity Method

At December 31, 2022 and 2021, we had investments in non-publicly traded companies that do not have readily determinable fair values with carrying amounts that totaled $5.3 million and $3.9 million, respectively. These investments which are measured at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer. Changes resulting from impairment and observable price changes are recognized in the statements of income during the period the change is identified.

The changes in non-marketable investments not accounted for under the equity method for the years ended December 31, 2022 and 2021 are as follows:

(in thousands)	2022	2021
Balance at beginning of year	$3,945	$4,142
Cash investments in equity securities, net	52	81
Shares received in exchange for services	1,475	—
Foreign currency translation adjustments	(143)	(278)
Balance at end of year	**$5,329**	**$3,945**

We made additional investments of $0.1 million in non-marketable investments not accounted for under equity method for the years ended December 31, 2022 and 2021. Additionally, during 2022, we received shares as payment for services performed.

In 2020, we acquired the remaining shares of NeuMoDx as further discussed in Note 5 "Acquisitions". Invitae Corporation (Invitae), a publicly traded company (NVTA), completed the acquisition of ArcherDX, Inc. (ArcherDX), a company in which we held an approximate 8% investment. In exchange for our shares in ArcherDX, we initially received cash of $21.1 million and 2.4 million shares in Invitae followed by an additional 0.4 million shares for milestone achievement, as shown in the marketable equity securities table below. For the year ended December 31, 2021, we recognized a total gain of $102.0 million in other income, net in the accompanying consolidated statement of income as a result of this transaction. Additionally in 2020, we sold two other investments. One investment was sold for its book value and we received $3.7 million in cash. The other investment had a carrying value of $2.5 million and was sold for cash of $0.3 million and the shares in OncoCyte Corporation (OncoCyte), shown in the marketable equity securities table below. A loss of $2.3 million was recognized in other income, net on the sale of this investment. We also recorded a $0.4 million impairment in other income, net following indications that the carrying value was no longer recoverable. Accordingly, the investment was fully impaired.

For non-marketable investments not accounted for under the equity method as of both December 31, 2022 and 2021, cumulative upward adjustments for price changes was $0.7 million. These adjustments were due to equity offerings at a higher price from the issuer in orderly transactions for identical or similar investments as those we hold.

Marketable Equity Securities

During the year ended December 31, 2021, we sold all previously held investments in marketable equity securities that had readily determinable fair values. These investments are reported at fair value with gains and losses recorded in earnings.

The changes in marketable equity securities during the year ended December 31, 2021 are as follows:

	Invitae		OncoCyte		Oncimmune Holdings plc (Oncimmune)		HTG Molecular Diagnostics, Inc (HTGM)	
(in $ thousands, except shares data)	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount
Balance at December 31, 2020	**2,769,189**	**$115,780**	**88,101**	**$211**	**560,416**	**$1,258**	**55,556**	**$266**
Shares received upon milestone achievement	1,100,190	35,338	30,152	147	86,218	220	—	—
(Loss) gain on change in fair value	—	(3,066)	—	123	—	61	—	65
Sale of investment	(3,869,379)	(148,052)	(118,253)	(481)	(646,634)	(1,539)	(55,556)	(331)
Balance at December 31, 2021	**—**	**$—**	**—**	**$—**	**—**	**$—**	**—**	**$—**

During 2021, we sold all shares received from Invitae upon milestone achievement and realized a gain of $32.3 million in other income, net in the accompanying consolidated statement of income.

During the year ended December 31, 2020, unrealized losses recognized for the change in fair market value of all marketable equity securities totaled $5.7 million of which $5.4 million is attributable to short-term and $0.3 million to long-term investments.

11. Goodwill and Intangible Assets

The following sets forth the intangible assets by major asset class as of December 31, 2022 and 2021:

(in thousands)	Weighted Average Life (in years)	2022 Gross Carrying Amount	2022 Accumulated Amortization	2021 Gross Carrying Amount	2021 Accumulated Amortization
Amortized Intangible Assets:					
Patent and license rights	10.89	$203,549	($140,632)	$297,986	($202,569)
Developed technology	10.68	780,233	(407,401)	810,420	(400,021)
Customer base, trademarks, and non-compete agreements	12.38	227,171	(179,658)	263,878	(204,197)
	10.87	$1,210,953	($727,691)	$1,372,284	($806,787)
Unamortized Intangible Assets:					
In-process research and development		$61,534		$61,939	
Goodwill		2,352,569		2,350,763	
		$2,414,103		**$2,412,702**	

During 2022, certain fully amortized intangible assets with a gross carrying amount of $135.3 million were retired.

In-process research and development is from the acquisitions of NeuMoDx in 2020 and STAT-Dx in 2018. The estimated fair value of acquired in-process research and development projects which have not reached technological feasibility at the date of acquisition are capitalized and subsequently tested for impairment through completion of the development process, at which point the capitalized amounts are amortized over their estimated useful life. If a project is abandoned rather than completed, all capitalized amounts are written-off immediately.

The changes in intangible assets, excluding goodwill, for the years ended December 31, 2022 and 2021 are as follows:

(in thousands)	2022	2021
Balance at beginning of year	$627,436	$726,194
Additions	19,632	23,969
Additions from acquisitions	17,247	—
Amortization	(93,714)	(104,371)
Disposals	(35)	(4,571)
Impairments	(12,829)	—
Foreign currency translation adjustments	(12,941)	(13,785)
Balance at end of year	**$544,796**	**$627,436**

Intangible additions of $19.6 million in the above table include $10.9 million of cash paid during the year ended December 31, 2022 together with $7.0 million of additions which were previously recorded as prepayments and $1.7 million of additions that were accrued as of December 31, 2022. Cash paid for purchases of intangible assets during the year ended December 31, 2022 totaled $20.1 million of which $4.8 million is related to current year payments for

assets that were accrued as of December 31, 2021 and $4.4 million is related to prepayments recorded in other long-term assets in the accompanying consolidated balance sheet.

Cash paid for intangible assets during the year ended December 31, 2021 totaled $16.6 million of which $8.4 million is related to payments in 2021 for licenses that were accrued as of December 31, 2020 and $0.2 million for prepayments recorded in other long-term assets in accompanying consolidated balance sheet. Intangible additions of $24.0 million in 2021 includes $15.0 million associated to a fully paid-up technology license received in exchange for a convertible note, $8.1 million of cash paid during the year and $0.9 million of additions which were previously recorded as prepayments.

Amortization expense on intangible assets totaled approximately $93.7 million, $104.4 million and $103.2 million, respectively, for the years ended December 31, 2022, 2021 and 2020. During the year ended December 31, 2022, we recorded a charge to restructuring, acquisition, integration and other, net in the accompanying statement of income, to fully impair a license with a carrying value of $12.8 million. This license was to use technology of Ellume Limited, Australia. In connection with Ellume starting insolvency proceedings in September 2022, we decided to cease all product development and manufacturing activities associated with this license and determined that there was no alternative use nor recoverable value. Accordingly, the license was fully impaired.

Amortization of intangibles for the next five years is expected to be approximately:

Years ended December 31, (in thousands)	
2023	$87,794
2024	$84,412
2025	$73,280
2026	$65,875
2027	$60,410

The changes in goodwill for the years ended December 31, 2022 and 2021 are as follows:

(in thousands)	**2022**	2021
Balance at beginning of year	$2,350,763	$2,364,031
Business combinations	42,201	—
Purchase adjustments	(303)	33,716
Foreign currency translation adjustments	(40,092)	(46,984)
Balance at end of year	**$2,352,569**	**$2,350,763**

The changes in the carrying amount of goodwill during the year ended December 31, 2022 resulted primarily from the acquisition of BLIRT S.A. in May 2022 and foreign currency translation adjustments driven by changes in the euro, Australian dollar, Swiss franc and British pound. The changes in goodwill during the year ended December 31, 2021 resulted primarily from changes in foreign currency translation partially offset by purchase adjustments related to the acquisition of NeuMoDx.

12. Leases

We have operating leases primarily for real estate. The leases generally have terms which range from one year to 15 years, some include options to extend or renew, and some include options to early terminate the leases. As of December 31, 2022 and 2021, no such options have been recognized as part of the right-of-use assets and lease liabilities.

Operating leases can contain variable lease charges based on an index like consumer prices or rates. During the years ended December 31, 2022 and 2021, amounts recorded as variable lease payments not included in the operating lease liability were not material.

When the interest rate implicit in each lease is not readily determinable, we apply our incremental borrowing rate in determining the present value of lease payments. All operating lease expense is recognized on a straight-line basis over the lease term. For the years ended December 31, 2022 and 2021, we recognized $27.0 million and $27.2 million in total lease costs, respectively.

Supplemental balance sheet and other information related to operating leases as of December 31, 2022 and 2021 are as follows:

(in thousands, except lease term and discount rate)	Location in consolidated balance sheet	**2022**	2021
Operating lease right-of-use assets	Other long-term assets	$95,523	$100,894
Current operating lease liabilities	Accrued and other current liabilities	$22,220	$22,048
Long-term operating lease liabilities	Other long-term liabilities	$71,406	$76,534
Weighted average remaining lease term		6.92 years	7.80 years
Weighted average discount rate		2.08 %	1.90 %

Supplemental cash flow information related to operating leases for the years ended December 31, 2022 and 2021 are as follows:

(in thousands)	**2022**	2021
Cash paid for operating leases included in cash flows from operating activities	$26,842	$27,429
Operating lease right-of-use assets obtained in exchange for lease obligations	$25,148	$26,784

Future maturities of operating lease liabilities as of December 31, 2022 are as follows:

Years ending December 31, (in thousands)	
2023	$23,747
2024	18,693
2025	13,598
2026	9,361
2027	7,285
Thereafter	28,256
Total lease payments	100,940
Less: Imputed interest	(7,314)
Total	**$93,626**

As of December 31, 2022, we had committed to $8.3 million of additional future operating lease liabilities that have not yet commenced. We did not hold any material finance leases as of December 31, 2022 and 2021.

13. Accrued and Other Current Liabilities

Accrued and other current liabilities at December 31, 2022 and 2021 consist of the following:

(in thousands)	Notes	2022	2021
Fair value of derivative instruments	(14)	$111,252	$181,858
Payroll and related accruals		99,885	100,756
Deferred revenue	(4)	69,000	63,368
Accrued expenses		62,469	54,271
Other liabilities		54,548	66,589
Operating lease liabilities	(12)	22,220	22,048
Cash collateral	(14)	21,755	9,200
Income taxes payable	(17)	13,980	27,669
Accrued royalties	(20)	12,877	12,559
Accrued contingent consideration and milestone payments	(15)	8,181	24,100
Accrued interest on long-term debt	(16)	5,431	4,488
Restructuring accruals	(6)	4,639	1,714
Total accrued and other current liabilities		**$486,237**	**$568,620**

14. Derivatives and Hedging

Objective and Strategy

In the ordinary course of business, we use derivative instruments, including swaps, forwards and/or options, to manage potential losses from foreign currency exposures and interest bearing assets or liabilities. The principal objective of such derivative instruments is to minimize the risks and/or costs associated with our global financial and operating activities. We do not utilize derivative or other financial instruments for trading or other speculative purposes. We recognize all derivatives as either assets or liabilities on the balance sheet on a gross basis, measure those instruments at fair value and recognize the change in fair value in earnings in the period of change, unless the derivative qualifies as an effective hedge that offsets certain exposures. We have agreed with almost all of our counterparties with whom we had entered into cross-currency swaps, interest rate swaps or foreign exchange contracts, to enter into bilateral collateralization contracts under which we will receive or provide cash collateral, as the case may be, for the net position with each of these counterparties. As of December 31, 2022, cash collateral positions consisted of $21.8 million recorded in accrued and other current liabilities and $21.1 million recorded in prepaid expenses and other current assets. As of December 31, 2021, we had cash collateral positions consisting of $9.2 million recorded in accrued and other current liabilities and $11.2 million recorded in prepaid expenses and other current assets in the accompanying consolidated balance sheets.

Non-Derivative Hedging Instrument

Net Investment Hedge

We are party to a foreign currency non-derivative hedging instrument that is designated and qualifies as net investment hedge. The objective of the hedge is to protect part of the net investment in foreign operations against adverse changes in the exchange rate between the euro and the functional currency of the U.S. dollar. The non-derivative hedging instrument is the German private corporate bond (2017 Schuldschein) which was issued in 2017 in the total amount of $331.1 million as described in Note 16 "Debt". Of the $331.1 million, which is held in both U.S. dollars and Euros, €255.0 million was designated as the hedging instrument as of December 31, 2021 against a portion of our Euro net investments in our foreign operations. As further described in Note 16, four tranches of the 2017 Schuldschein matured and were paid in October 2022 and two tranches of the 2017 Schuldschein matured and were paid during 2021.

As a result, €109.5 million remained designated as a hedging instrument as of December 31, 2022. In July 2022, we issued an additional €370.0 million German private corporate bond (2022 Schuldschein) as described in Note 16, and it is designated in its entirety as the hedging instrument against a portion of our euro net investments in our foreign operations. The relative changes in both the hedged item and hedging instrument are calculated by applying the change in spot rate between two assessment dates against the respective notional amount. The effective portion of the hedge is recorded in the cumulative translation adjustment account within other accumulated comprehensive loss. Based on the spot rate method, the unrealized loss recorded in equity as of December 31, 2022 and 2021 is $22.6 million and $2.1 million, respectively. Since we are using the debt as the hedging instrument, which is also remeasured based on the spot rate method, there is no hedge ineffectiveness related to the net investment hedge as of December 31, 2022 and 2021.

Derivatives Designated as Hedging Instruments

Net Investment Hedge

In September 2022, we entered into a one-month interest rate derivative contract for a total notional amount €135.0 million, that matured in October 13, 2022, which qualified as net investment hedge. The objective of the hedge was to protect the additional investments in foreign operations in September 2022 against adverse changes in the exchange rate between the euro and the functional currency of the U.S. dollar. The relative changes in both the hedged item and derivative hedging instrument were calculated by applying the change in spot rate between two assessment dates against the respective notional amount. The effective portion of the hedge is recorded in the cumulative translation adjustment account within other accumulated comprehensive loss and will be reclassified to earnings upon the disposal or liquidation of the foreign operations. In October 2022, the interest rate derivative contract expired and the unrealized gain recorded in equity was $5.8 million as of December 31, 2022.

Cash Flow Hedges

As of December 31, 2022 and 2021, we held derivative instruments that are designated and qualify as cash flow hedges, where the effective portion of the gain or loss on the derivative is reported as a component of other comprehensive loss and reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. Gains and losses on the derivative representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized in current earnings. To date, we have not recorded any hedge ineffectiveness related to any cash-flow hedges in earnings. Based on their valuation as of December 31, 2022, we expect approximately $1.2 million of derivative losses included in accumulated other comprehensive loss will be reclassified into income during the next 12 months. The cash flows derived from derivatives are classified in the consolidated statements of cash flows in the same category as the consolidated balance sheets account of the underlying item.

We use interest rate derivative contracts to align our portfolio of interest bearing assets and liabilities with our risk management objectives. Since 2015, we have been a party to five cross currency interest rate swaps through 2025 for a total notional amount of €180.0 million which qualify for hedge accounting as cash flow hedges. In September 2022, we entered into five new cross currency interest rate swaps through 2025 for a total notional amount of CHF 542.0 million which qualify for hedge accounting as cashflow hedges. We determined that no ineffectiveness exists related to these swaps. As of December 31, 2022 and 2021, interest receivables of $5.5 million and $1.4 million, respectively are recorded in prepaid expenses and other current assets in the accompanying consolidated balance sheets.

Fair Value Hedges

Until October 2022, we held derivative instruments that qualified for hedge accounting as fair value hedges. For derivative instruments that are designated and qualify as a fair value hedge, the effective portion of the gain or loss on the derivative is reflected in earnings. This effect on earnings is offset by the change in the fair value of the hedged item attributable to the risk being hedged that is also recorded in earnings. The cash flows derived from derivatives are classified in the consolidated statement of cash flows in the same category as the consolidated balance sheet account of the underlying item.

We held interest rate swaps which effectively fixed the fair value of a portion of our fixed rate private placement debt and qualified for hedge accounting as fair value hedges. These interest rate swap derivative instruments expired along with the repayment of the private placement debt in October 2022, as described in Note 16 "Debt". As of December 31, 2021, interest receivables of $0.6 million is recorded in prepaid and other current assets in the accompanying consolidated balance sheets. There has been no ineffectiveness related to the interest rate swaps.

Derivatives Not Designated as Hedging Instruments

Call Options

We entered into Call Options which, along with the sale of the Warrants, represent the Call Spread Overlay entered into in connection with the Cash Convertible Notes and which are more fully described in Note 16 "Debt". In these transactions, the Call Options are intended to address the equity price risk inherent in the cash conversion feature of each instrument by offsetting cash payments in excess of the principal amount due upon any conversion of the Cash Convertible Notes. Accordingly, the derivative is presented as either current or long-term based upon the classification of the related debt. As of December 31, 2021, the 2023 Notes may be surrendered for conversion through the close of business on March 31, 2022 as discussed in Note 16 "Debt". Accordingly, the related call options were classified as current as of December 31, 2021. As of December 31, 2022, the 2023 Notes and the related call options have been reclassified as current.

Aside from the initial payment of premiums for the Call Options, we will not be required to make any cash payments under the Call Options. We will, however, be entitled to receive under the terms of the Call Options, an amount of cash generally equal to the amount by which the market price per share of our common stock exceeds the exercise price of the Call Options during the relevant valuation period. The exercise price under the Call Options is equal to the conversion price of the Cash Convertible Notes.

The Call Options, for which our common stock is the underlying security, are derivative assets that require mark-to-market accounting treatment. The Call Options are measured and reported at fair value on a recurring basis, within Level 2 of the fair value hierarchy. The change in fair value is recognized immediately in our consolidated statements of income in other income, net.

Cash Convertible Notes Embedded Cash Conversion Option

The embedded cash conversion option within the Cash Convertible Notes discussed in Note 16 "Debt" is required to be separated from the Cash Convertible Notes and accounted for separately as a derivative liability, with changes in fair value reported in our consolidated statements of income in other income, net until the cash conversion option settles or expires. The embedded cash conversion option is measured and reported at fair value on a recurring basis, within Level 2 of the fair value hierarchy.

Because the terms of the Cash Convertible Notes' embedded cash conversion option are substantially similar to those of the Call Options, discussed above, we expect the effect on earnings from these two derivative instruments to mostly offset each other.

Foreign Exchange Contracts

As a globally active enterprise, we are subject to risks associated with fluctuations in foreign currencies in our ordinary operations. This includes foreign currency-denominated receivables, payables, debt, and other balance sheet positions including intercompany items. We manage balance sheet exposure on a group-wide basis using foreign exchange forward contracts, foreign exchange options and cross-currency swaps.

We are party to various foreign exchange forward, option and swap arrangements which had an aggregate notional value of $466.0 million at December 31, 2022, which expire at various dates through July 2023. At December 31, 2021, these arrangements had an aggregate notional value of $1.3 billion, which expired at various dates through December 2022. The transactions have been entered into to offset the effects from short-term balance sheet exposure to foreign currency exchange risk. Changes in the fair value of these arrangements have been recognized in other income, net.

Fair Values of Derivative Instruments

The following table summarizes the fair value amounts of derivative instruments reported in the consolidated balance sheets as of December 31, 2022 and 2021:

	2022		2021	
(in thousands)	Current Asset	Long-Term Asset	Current Asset	Long-Term Asset
Assets:				
Derivative instruments designated as hedges				
Interest rate contracts - cash flow hedge [1]	$—	$12,256	$—	$—
Interest rate contracts - fair value hedge [1]	—	—	1,971	—
Total derivative instruments designated as hedges	$—	$12,256	$1,971	$—
Undesignated derivative instruments				
Equity options	$102,671	$119,098	$162,141	$190,430
Foreign exchange forwards and options	8,946	—	11,172	—
Total undesignated derivative instruments	$111,617	$119,098	$173,313	$190,430
Total Derivative Assets	**$111,617**	**$131,354**	**$175,284**	**$190,430**

	2022		2021	
(in thousands)	Current Liability	Long-Term Liability	Current Liability	Long-Term Liability
Liabilities:				
Derivative instruments designated as hedges				
Interest rate contracts - cash flow hedge [1]	$—	($36,982)	$—	($628)
Total derivative instruments designated as hedges	$—	($36,982)	$—	($628)
Undesignated derivative instruments				
Equity options	($102,896)	($119,736)	($162,608)	($191,251)
Foreign exchange forwards and options	(8,356)	—	(19,250)	—
Total undesignated derivative instruments	($111,252)	($119,736)	($181,858)	($191,251)
Total Derivative Liabilities	**($111,252)**	**($156,718)**	**($181,858)**	**($191,879)**

[1] The fair value amounts for the interest rate contracts do not include accrued interest.

Gains and Losses on Derivative Instruments

The following tables summarize the gains and losses on derivative instruments for the years ended December 31, 2022, 2021 and 2020:

(in thousands)	2022 Other income, net	2021 Other income, net	2020 Other income, net
Total amounts presented in the Consolidated Statements of Income in which the effects of cash flow and fair value hedges are recorded	$6,741	$40,671	$114,326
Gains (Losses) on Derivatives in Cash Flow Hedges			
Interest rate contracts			
Amount of gain (loss) reclassified from accumulated other comprehensive loss	$21,940	($17,010)	$18,666
Amounts excluded from effectiveness testing	—	—	—
Gains (Losses) on Derivatives in Fair Value Hedges			
Interest rate contracts			
Hedged item	1,971	3,072	(2,568)
Derivatives designated as hedging instruments	(1,971)	(3,072)	2,568
Gains (Losses) Derivatives Not Designated as Hedging Instruments			
Equity options	(130,801)	(23,882)	322,580
Cash convertible notes embedded cash conversion option	131,227	28,154	(321,213)
Foreign exchange forwards and options	72,641	10,333	(12,429)
Total gains (losses) on derivative instruments	**$95,007**	**($2,405)**	**$7,604**

Balance Sheet Line Item in which the Hedged Item is Included

The following tables summarizes the balance sheet line item in which the hedged item is included as of December 31, 2022 and 2021:

	Carrying Amount of the Hedged Assets (Liabilities)		Cumulative Amount of Fair Value Hedging Adjustment Included in the Carrying Amount of Hedged Assets (Liabilities)	
(in thousands)	**2022**	2021	**2022**	2021
Balance Sheet line item in which the Hedged Item is included				
Current portion of long-term debt	$—	($128,916)	$—	$1,971

15. Financial Instruments and Fair Value Measurements

Assets and liabilities are measured at fair value according to a three-tier fair value hierarchy which prioritizes the inputs used in measuring fair value as follows:

- *Level 1.* Observable inputs, such as quoted prices in active markets;
- *Level 2.* Inputs, other than the quoted price in active markets, that are observable either directly or indirectly; and
- *Level 3.* Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

The following table presents our fair value hierarchy for our financial assets and liabilities measured at fair value on a recurring basis as of December 31, 2022 and 2021:

	2022				2021			
(in thousands)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets:								
Cash equivalents	$289,394	$94,828	$—	$384,222	$366,117	$179,844	$—	$545,961
Short-term investments	79,600	592,997	—	672,597	—	139,785	—	139,785
Non-marketable equity securities	—	—	5,329	5,329	—	—	3,945	3,945
Equity options	—	221,769	—	221,769	—	352,571	—	352,571
Foreign exchange forwards and options	—	8,946	—	8,946	—	11,172	—	11,172
Interest rate contracts - cash flow hedge	—	12,256	—	12,256	—	—	—	—
Interest rate contracts - fair value hedge	—	—	—	—	—	1,971	—	1,971
	$368,994	**$930,796**	**$5,329**	**$1,305,119**	**$366,117**	**$685,343**	**$3,945**	**$1,055,405**
Liabilities:								
Foreign exchange forwards and options	$—	($8,356)	$—	($8,356)	$—	($19,250)	$—	($19,250)
Interest rate contracts - cash flow hedge	—	(36,982)	—	(36,982)	—	(628)	—	(628)
Equity options	—	(222,632)	—	(222,632)	—	(353,859)	—	(353,859)
Contingent consideration	—	—	(18,088)	(18,088)	—	—	(24,100)	(24,100)
	$—	**($267,970)**	**($18,088)**	**($286,058)**	**$—**	**($373,737)**	**($24,100)**	**($397,837)**

The carrying values of financial instruments, including cash and cash equivalents, accounts receivable, accounts payable and other accrued liabilities, approximate their fair values due to their short-term maturities.

Our assets and liabilities measured at fair value on a recurring basis consist of cash equivalents and short-term investments, which are classified in Level 1 and Level 2 of the fair value hierarchy, derivative contracts used to hedge currency and interest rate risk and derivative financial instruments entered into in connection with the Cash Convertible Notes discussed in Note 16 "Debt", which are classified in Level 2 of the fair value hierarchy, contingent consideration accruals which are classified in Level 3 of the fair value hierarchy, and are shown in the tables below and non-marketable equity securities remeasured during the year ended December 31, 2022 and 2021 are classified within Level 3 in the fair value hierarchy. There were no transfers between levels for the year ended December 31, 2022.

In determining fair value for Level 2 instruments, we apply a market approach, using quoted active market prices relevant to the particular instrument under valuation, giving consideration to the credit risk of both the respective counterparty to the contract and the Company. To determine our credit risk, we estimated our credit rating by benchmarking the price of outstanding debt to publicly-available comparable data from rated companies. Using the estimated rating, our credit risk was quantified by reference to publicly-traded debt with a corresponding rating. The Level 2 derivative financial instruments include the Call Options asset and the embedded conversion option liability. See Note 16 "Debt", and Note 14 "Derivatives and Hedging", for further information. The derivatives are not actively traded and are valued based on an option pricing model that uses observable market data for inputs. Significant market data inputs used to determine fair values included our common stock price, the risk-free interest rate, and the implied volatility of our common stock. The Call Options asset and the

embedded cash conversion option liability were designed with the intent that changes in their fair values would substantially offset, with limited net impact to our earnings. Therefore, the sensitivity of changes in the unobservable inputs to the option pricing model for such instruments is substantially mitigated.

Our Level 3 instruments include non-marketable equity security investments. Under the measurement alternative, the carrying value is measured at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments of the same issuer. Adjustments are determined primarily based on a market approach as of the transaction date.

Our Level 3 instruments also include contingent consideration liabilities. We value contingent consideration liabilities using unobservable inputs, applying the income approach, such as the discounted cash flow technique, or the probability-weighted scenario method. Contingent consideration arrangements obligate us to pay the sellers of an acquired entity if specified future events occur or conditions are met such as the achievement of technological or revenue milestones. We use various key assumptions, such as the probability of achievement of the milestones (0% to 100%) and the discount rate (between 6.5% and 6.6%), to represent the non-performing risk factors and time value when applying the income approach. We regularly review the fair value of the contingent consideration, and reflect any change in the accrual in the consolidated statements of income in the line items commensurate with the underlying nature of milestone arrangements.

Refer to Note 10 "Investments" for the change in non-marketable equity securities with Level 3 inputs during the year ended December 31, 2022 and 2021. For contingent consideration liabilities with Level 3 inputs, the following table summarizes the activity for the years ended December 31, 2022 and 2021, all of which is related to 2018 acquisition of STAT-Dx:

(in thousands)	**2022**	2021
Balance at beginning of year	($24,100)	($23,593)
Changes in fair value	112	(507)
Payments	5,900	—
Balance at end of year	**($18,088)**	**($24,100)**

As of December 31, 2022, $18.1 million was accrued for contingent consideration, of which $8.2 million is included in accrued and other current liabilities and $9.9 million is included in other long-term liabilities in the accompanying consolidated balance sheet.

The estimated fair value of long-term debt as disclosed in Note 16 "Debt" was based on current interest rates for similar types of borrowings. The estimated fair values may not represent actual values of the financial instruments that could be realized as of the balance sheet date or that will be realized in the future.

The fair values of the financial instruments are presented in Note 16 "Debt" and were determined as follows:

Cash Convertible Notes and Convertible Notes: Fair value is based on an estimation using available over-the-counter market information on the Cash Convertible Notes due in 2023 and 2024 as well as the Convertible Notes due in 2027.

U.S. Private Placement: Fair value of the outstanding notes is based on an estimation using the changes in the U.S. Treasury rates.

German Private Placement: Fair value is based on an estimation using changes in the euro swap rates.

There were no adjustments in the years ended December 31, 2022 and 2021 for nonfinancial assets or liabilities required to be measured at fair value on a nonrecurring basis.

16. Debt

At December 31, 2022 and 2021, total long-term debt, net of debt issuance costs of $6.6 million and $8.4 million, respectively, consists of the following:

(in thousands)	2022	2021
0.500% Senior Unsecured Cash Convertible Notes due 2023	$389,552	$375,149
1.000% Senior Unsecured Cash Convertible Notes due 2024	464,331	446,503
0.000% Senior Unsecured Convertible Notes due 2027	497,336	496,804
3.75% Series B Senior Notes due October 16, 2022	—	301,843
3.90% Series C Senior Notes due October 16, 2024	—	26,967
German Private Placement (2017 Schuldschein)	116,699	294,504
German Private Placement (2022 Schuldschein)	393,532	—
Total long-term debt	**1,861,450**	**1,941,770**
Less current portion	389,552	847,626
Long-term portion	**$1,471,898**	**$1,094,144**

The notes are all unsecured obligations that rank pari passu. Interest expense on long-term debt was $55.1 million, $50.7 million and $63.5 million for the years ended December 31, 2022, 2021 and 2020, respectively.

At December 31, 2021, the 2023 Notes were classified as current due to contingent conversion features as discussed below. No Contingent Conversion Conditions were triggered as of December 31, 2022 but the 2023 Notes remain classified as current because they become due in less than 12 months.

Repayments of long-term debt for the years ended December 31, 2022, 2021 and 2020 consisted of:

(in thousands)	2022	2021	2020
German Private Placement (2017 Schuldschein)	$153,003	$41,145	$—
0.875% Senior Unsecured Cash Convertible Notes due 2021	—	200	296,400
3.75% Series B Senior Notes due October 16, 2022	300,000	—	—
3.90% Series C Senior Notes due October 16, 2024	27,000	—	—
	$480,003	**$41,345**	**$296,400**

The principal amount, carrying amount and fair values of long-term debt instruments are summarized below:

	As of December 31, 2022				
				Fair Value	
(in thousands)	Principal Amount	Unamortized debt discount and issuance costs	Carrying Amount	Amount	Leveling
Cash Convertible Notes due 2023	$400,000	($10,448)	$389,552	$493,436	Level 1
Cash Convertible Notes due 2024	500,000	(35,669)	464,331	596,485	Level 1
Convertible Notes due 2027	500,000	(2,664)	497,336	471,545	Level 1
German Private Placement (2017 Schuldschein)	116,821	(122)	116,699	255,911	Level 2
German Private Placement (2022 Schuldschein)	394,638	(1,106)	393,532	345,743	Level 2
	$1,911,459	**($50,009)**	**$1,861,450**	**$2,163,120**	

	As of December 31, 2021				
		Unamortized debt discount and		Fair Value	
(in thousands)	Principal Amount	issuance costs	Carrying Amount	Amount	Leveling
Cash Convertible Notes due 2023	$400,000	($24,851)	$375,149	$547,256	Level 1
Cash Convertible Notes due 2024	500,000	(53,497)	446,503	647,100	Level 1
Convertible Notes due 2027	500,000	(3,196)	496,804	536,400	Level 1
U.S. Private Placement [1]	328,971	(161)	328,810	331,566	Level 2
German Private Placement (2017 Schuldschein)	294,738	(234)	294,504	296,587	Level 2
	$2,023,709	**($81,939)**	**$1,941,770**	**$2,358,909**	

[1] The principal amount of the U.S. Private Placement includes $2.0 million as of December 31, 2021 for the impact of the interest rate swaps which qualify for hedge accounting as fair value hedges which are further discussed in Note 14 "Derivatives and Hedging".

Future maturities (stated at the carrying values) of long-term debt as of December 31, 2022 are as follows:

Years ending December 31, (in thousands)	
2023	$389,552
2024	565,587
2025	54,803
2026	—
2027	610,134
Thereafter	241,374
	$1,861,450

Interest expense for the years ended December 31, 2022 and 2021 related to the 2027 Notes and the Cash Convertible Notes was comprised of the following:

(in thousands)	**2022**	2021
Coupon interest	$7,000	$7,000
Amortization of original issuance discount	30,170	28,864
Amortization of debt issuance costs	2,593	2,521
Total interest expense	**$39,763**	**$38,385**

Convertible Notes due 2027

On December 17, 2020, we issued zero coupon convertible notes in an aggregate principal amount of $500.0 million with a maturity date of December 17, 2027 (2027 Notes). The 2027 Notes carry no coupon interest. The net proceeds of the 2027 Notes totaled $497.6 million, after payment of debt issuance costs of $3.7 million.

In accounting for the issuance of the 2027 Notes in 2020 prior to the adoption of ASU 2020-06, we separated the 2027 Notes into liability and equity components. We allocated $445.9 million of the 2027 Notes to the liability component, representing the fair value of a similar debt instrument that does not have an associated convertible feature; and $54.1 million to the equity component, representing the conversion option, which did not meet the criteria for separate accounting as a derivative as it is indexed to our own stock. ASU 2020-06 was adopted on January 1, 2021, and this resulted in a decrease of

$54.1 million to additional paid-in capital and an increase of $0.3 million to retained earnings for the conversion feature related to the liability for the 2027 Notes.

The effective interest rate of the 2027 Notes is 1.65%, which is imputed based on the amortization of the fair value of the embedded conversion option over the remaining term of the 2027 Notes.

The 2027 Notes are convertible into common shares based on an initial conversion rate, subject to adjustment, of 2,477.65 shares per $200,000 principal amount of notes (which represents an initial conversion price of $80.7218 per share, or 6.2 million underlying shares). At conversion, we will settle the 2027 Notes by repaying the principal portion in cash and any excess of the conversion value over the principal amount in shares of common stock.

The notes may be redeemed at the option of each noteholder at their principal amount on December 17, 2025 or in connection with a change of control or delisting event.

The 2027 Notes are convertible in whole, but not in part, at the option of the noteholders on a net share settlement basis, at the prevailing conversion price in the following circumstances beginning after January 27, 2021 through June 16, 2027:

- if the last reported sale price of our common stock for at least 20-consecutive trading days during a period of 30-consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day; or
- if we undergo certain fundamental changes, including a change of control, as defined in the agreement; or
- if parity event or trading price unavailability event, as the case maybe occurs during the period of 10 days, including the first business day following the relevant trading price notification date; or
- if we distribute assets or property to all or substantially all of the holders of our common stock and those assets or other property have a value of more than 25% of the average daily volume-weighted average trading price of our common stock for the prior 20 consecutive trading days; or
- in case of early redemption in respect of the outstanding notes at our option, where the conversion date falls in the period from (and including) the date on which the call notice is published to (and including) the 45th business day prior to the redemption date; or
- if we experience certain customary events of default, including defaults under certain other indebtedness, until such event of default has been cured or waived.

The noteholders may convert their notes at any time, without condition, on or after June 17, 2027 until the 45th business day prior to December 17, 2027.

No Contingent Conversion Conditions were triggered for the 2027 Notes as of December 31, 2022 or December 31, 2021.

Cash Convertible Notes due 2023 and 2024

On September 13, 2017, we issued $400.0 million aggregate principal amount of Cash Convertible Senior Notes which is due in 2023 (2023 Notes). The net proceeds of the 2023 Notes were $365.6 million, after payment of the net cost of the Call Spread Overlay described below and transaction costs.

On November 13, 2018, we issued $500.0 million aggregate principal amount of Cash Convertible Senior Notes which is due in 2024 (2024 Notes). The net proceeds of the 2024 Notes were $468.9 million, after payment of the net cost of the Call Spread Overlay described below and transaction costs.

We refer to the 2023 Notes and 2024 Notes, collectively as the “Cash Convertible Notes".

Interest on the Cash Convertible Notes is payable semi-annually in arrears and will mature on the maturity date unless repurchased or converted with their terms prior to such date. The interest rate and corresponding maturity of each Note are summarized in the table below. The Cash Convertible Notes that remain outstanding as of December 31, 2022 are solely convertible into cash in whole, but not in part, at the option of noteholders under the circumstances described below and during the contingent conversion periods as shown in the table below.

Cash Convertible Notes	Annual Interest Rate	Date of Interest Payments	Maturity Date	Contingent Conversion Period	Conversion Rate per $200,000 Principal Amount
2023 Notes	0.500%	March 13 and September 13	September 13, 2023	From October 24, 2017 to March 13, 2023	4,829.7279
2024 Notes	1.000%	May 13 and November 13	November 13, 2024	From December 24, 2018 to August 2, 2024	4,360.3098

Additionally, conversion may occur at any time following a Contingent Conversion Period through the fifth business day immediately preceding the applicable maturity date.

Upon conversion, noteholders will receive an amount in cash equal to the Cash Settlement Amount, calculated as described below. The Cash Convertible Notes are not convertible into shares of our common stock or any other securities.

Noteholders may convert Cash Convertible Notes into cash at their option at any time during the Contingent Conversion Periods described above only under the following circumstances (Contingent Conversion Conditions):

- if the last reported sale price of our common stock for at least 20-consecutive trading days during a period of 30-consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
- if we undergo certain fundamental changes, including a change of control, as defined in the agreement;
- if parity event or trading price unavailability event, as the case maybe occurs for the 2023 Notes and 2024 Notes during the period of 10 days, including the first business day following the relevant trading price notification date;
- if we elect to distribute assets or property to all or substantially all of the holders of our common stock and those assets or other property have a value of more than 25% of the average daily volume-weighted average trading price of our common stock for the prior 20 consecutive trading days;
- if we elect to redeem the Cash Convertible Notes; or
- if we experience certain customary events of default, including defaults under certain other indebtedness until such event has been cured or waived or the payment of the Notes have been accelerated.

No Contingent Conversion Conditions were triggered for the 2023 Notes as of December 31, 2022. As of December 31, 2021, the 2023 Notes were contingently convertible. No Contingent Conversion Conditions were triggered for the 2024 Notes as of December 31, 2022 or December 31, 2021.

The Contingent Conversion Conditions in the 2023 Notes and 2024 Notes noted above have been analyzed under ASC 815, Derivatives and Hedging, and, based on our analysis, we determined that each of the embedded features listed above are clearly and closely related to the 2023 Notes and 2024 Notes (i.e., the host contracts). As a result, pursuant to the accounting provisions of ASC 815, Derivatives and Hedging, these features noted above are not required to be bifurcated as separate instruments.

Upon conversion, holders are entitled to a cash payment (Cash Settlement Amount) equal to the average of the conversion rate multiplied by the daily volume-weighted average trading price for our common stock over a 50-day period. The conversion rate is subject to adjustment in certain instances but will not be adjusted for any accrued and unpaid interest. In addition, following the occurrence of certain corporate events that may occur prior to the applicable maturity date, we may be required to pay a cash make-whole premium by increasing the conversion rate for any holder who elects to convert Cash Convertible Notes in connection with the occurrence of such a corporate event.

We may redeem the Cash Convertible Notes in their entirety at a price equal to 100% of the principal amount of the applicable Cash Convertible Notes plus accrued interest at any time when 20% or less of the aggregate principal amount of the applicable Cash Convertible Notes originally issued remain outstanding.

Because the Cash Convertible Notes contain an embedded cash conversion option, we have determined that the embedded cash conversion option is a derivative financial instrument, which is required to be separated from the Cash Convertible Notes and accounted for separately as a derivative liability, with changes in fair value reported in our consolidated statements of income until the cash conversion option transaction settles or expires. The initial fair value liability of the embedded cash conversion option was $74.5 million for the 2023 Notes and $98.5 million for the 2024 Notes, which simultaneously reduced the carrying value of the Cash Convertible Notes (effectively an original issuance discount). For further discussion of the derivative financial instruments relating to the Cash Convertible Notes, refer to Note 14 "Derivatives and Hedging".

As noted above, the reduced carrying value on the Cash Convertible Notes resulted in a debt discount that is amortized to the principal amount through the recognition of non-cash interest expense using the effective interest method over the expected life of the debt, six years for both the 2023 Notes and 2024 Notes. This resulted in our recognition of interest expense on the Cash Convertible Notes at an effective rate approximating what we would have incurred had nonconvertible debt with otherwise similar terms been issued. The effective interest rate is 3.997% for 2023 Notes and 4.782% for the 2024 Notes, which is imputed based on the amortization of the fair value of the embedded cash conversion option over the remaining term of the Cash Convertible Notes.

We incurred approximately $6.2 million and $5.7 million in transaction costs for the 2023 Notes and 2024 Notes, respectively. Such costs have been allocated to the Cash Convertible Notes and deferred and are being amortized to interest expense over the terms of the Cash Convertible Notes using the effective interest method.

Cash Convertible Notes Call Spread Overlay

Concurrent with the issuance of the Cash Convertible Notes, we entered into privately negotiated hedge transactions (Call Options) with, and issued warrants to purchase shares of our common stock (Warrants) to, certain financial institutions. We refer to the Call Options and Warrants collectively as the “Call Spread Overlay”. The Call Options are intended to offset any cash payments payable by us in excess of the principal amount due upon any conversion of the Cash Convertible Notes. The Call Options are derivative financial instruments and are discussed further in Note 14 "Derivatives and Hedging". The Warrants are equity instruments and are further discussed in Note 18 "Equity".

Aside from the initial payment of a premium, we will not be required to make any cash payments under the Call Options, and will be entitled to receive an amount of cash, generally equal to the amount by which the market price per share of our common stock exceeds the exercise price of the Call Options during the relevant valuation period. The exercise price under the Call Options is initially equal to the conversion price of the Cash Convertible Notes.

The Warrants that were issued with our Cash Convertible Notes, could have a dilutive effect to the extent that the price of our common stock exceeds the applicable strike price of the Warrants. For each Warrant that is exercised, we will deliver to the holder a number of shares of our common stock equal to the amount by which the settlement price exceeds the exercise price, plus cash in lieu of any fractional shares. We will not receive any proceeds if the Warrants are exercised.

U.S. Private Placement

In October 16, 2012, we completed a private placement through the issuance of new senior unsecured notes at a total amount of $400.0 million with a weighted average interest rate of 3.66% (settled on October 16, 2012). The notes were issued in three series: (1) $73.0 million 7-year term due and paid on October 16, 2019 (3.19%); (2) $300.0 million 10-year term due and paid on October 16, 2022 (3.75%); and (3) $27.0 million 12-year term due on October 16, 2024 (3.90%) but called and paid in October 2022. We paid $2.1 million in debt issuance costs which will be amortized through interest expense using the effective interest method over the lifetime of the notes. The note purchase agreement contains certain financial and non-financial covenants, including but not limited to, restrictions on priority indebtedness and the maintenance of certain financial ratios. We were in compliance with these covenants at December 31, 2022. During 2014, we entered into interest rate swaps, which effectively fixed the fair value of $200.0 million of this debt. The interest rate swaps expired in October 2022 following the repayments of $127.0 million in 2022 and $73.0 million in 2019. These interest rate swaps qualify for hedge accounting as fair value hedges as further described in Note 14 "Derivatives and Hedging".

German Private Placement (2017 Schuldschein)

In 2017, we completed a German private placement bond (2017 Schuldschein) which was issued in several tranches totaling $331.1 million due in various periods through 2027. In the first quarter of 2021, we repaid $41.1 million for two tranches that matured. In October 2022, we repaid $153.0 million for the four tranches that matured. The 2017 Schuldschein consists of one U.S. dollar and several Euro denominated tranches. The euro tranches are designated as a foreign currency non-derivative hedging instrument that qualifies as a net investment hedge as described in Note 14 "Derivatives and Hedging". Based on the spot rate method, the change in the carrying value of the euro denominated tranches attributed to the net investment hedge as of December 31, 2022 totaled $5.2 million of unrealized gain and is recorded in equity. We paid $1.2 million in debt issuance costs which are being amortized through interest expense over the lifetime of the notes.

A summary of the tranches is as follows:

				Carrying Value (in thousands) as of December 31,	
Currency	Notional Amount	Interest Rate	Maturity	**2022**	2021
EUR	€21.5 million	Fixed 0.68%	October 2022	$—	$24,340
EUR	€64.5 million	Floating EURIBOR + 0.5%	October 2022	—	73,020
USD	$45.0 million	Floating LIBOR + 1.2%	October 2022	—	44,976
EUR	€25.0 million	Floating EURIBOR + 0.5%	October 2022	—	28,298
EUR	€64.0 million	Fixed 1.09%	June 2024	68,215	72,405
EUR	€31.0 million	Floating EURIBOR + 0.7%	June 2024	33,041	35,071
EUR	€14.5 million	Fixed 1.61%	June 2027	15,443	16,394
				$116,699	**$294,504**

German Private Placement (2022 Schuldschein)

In July and August 2022, we completed another German private placement bond (2022 Schuldschein) which was issued in several tranches totaling €370.0 million due in various periods through 2035. The 2022 Schuldschein consists of only euro denominated tranches which have either a fixed or floating rate. All tranches except for the €70.0 million fixed 3.04% tranche due August 2035 are ESG-linked wherein the interest rate is subject to adjustment of +/- 0.025% if our ESG rating changes. The euro tranches are designated as a foreign currency non-derivative hedging instrument that qualifies as a net investment hedge as described in Note 14 "Derivatives and Hedging". Based on the spot rate method, the change in the carrying value of the euro denominated tranches attributed to the net investment hedge as of December 31, 2022 totaled $22.0 million of unrealized loss and is recorded in equity. We paid $1.2 million in debt issuance costs which are being amortized through interest expense using the effective interest method over the lifetime of the notes.

A summary of the tranches issued is as follows:

Currency	Notional Amount	Interest Rate	Maturity	Carrying Value (in thousands) as of December 31, 2022
EUR	€51.5 million	Floating 6M EURIBOR + 0.55%	July 2025	$54,803
EUR	€62.0 million	Fixed 2.741%	July 2027	65,967
EUR	€29.5 million	Floating 6M EURIBOR + 0.70%	July 2027	31,388
EUR	€37.0 million	Fixed 3.044%	July 2029	39,365
EUR	€103.0 million	Floating 6M EURIBOR + 0.85%	July 2029	109,585
EUR	€9.5 million	Fixed 3.386%	July 2032	10,107
EUR	€7.5 million	Floating 6M EURIBOR + 1.0%	July 2032	7,979
EUR	€70.0 million	Fixed 3.04%	August 2035	74,338
				$393,532

Revolving Credit Facility

Our credit facilities available and undrawn at December 31, 2022 total €427.0 million (approximately $455.4 million). This includes a €400.0 million syndicated ESG-linked revolving credit facility expiring December 2025 and three other lines of credit amounting to €27.0 million with no expiration date. The €400.0 million facility can be utilized in Euro and bears interest of 0.550% to 1.500% above EURIBOR, and is offered with interest periods of one, three or six months. The commitment fee is calculated based on 35% of the applicable margin. Commitment fees of $0.9 million and $1.3 million were paid for the years ended December 31, 2022 and 2021, respectively. The revolving facility agreement contains certain financial and non-financial covenants, including but not limited to, restrictions on the encumbrance of assets and the maintenance of certain financial ratios. We were in compliance with these covenants at December 31, 2022. The credit facilities are for general corporate purposes and no amounts were utilized at December 31, 2022.

17. Income Taxes

Income before income tax expense for the years ended December 31, 2022, 2021 and 2020 consisted of:

(in thousands)	**2022**	2021	2020
Pretax income (loss) in the Netherlands	$14,551	$7,062	($38,242)
Pretax income from foreign operations	498,050	618,771	477,714
	$512,601	**$625,833**	**$439,472**

Income tax expense for the years ended December 31, 2022, 2021 and 2020 are as follows:

(in thousands)	2022	2021	2020
Current:			
The Netherlands	$9,672	$1,714	$270
Foreign	89,321	116,808	86,720
	98,993	118,522	86,990
Deferred:			
The Netherlands	(683)	(1,776)	(6,921)
Foreign	(8,920)	(3,512)	215
	(9,603)	(5,288)	(6,706)
Total income tax expense	**$89,390**	**$113,234**	**$80,284**

The Netherlands' statutory income tax rate, the income tax rate of our country of domicile, was 25.8% for the year ended December 31, 2022 and 25% for the years ended December 31, 2021 and 2020. Income from foreign subsidiaries is generally taxed at the statutory income tax rates applicable in the respective countries of domicile.

The principal items comprising the differences between income taxes computed at the Netherlands' statutory income tax rate and our effective tax rate for the years ended December 31, 2022, 2021 and 2020 are as follows:

	2022	2021	2020
The Netherlands' statutory income tax rate	25.8 %	25.0 %	25.0 %
Taxation of foreign operations, net[1]	(4.9)	(3.0)	(2.1)
Unrecognized tax benefits[2]	0.9	1.6	8.2
Excess tax benefit related to share-based compensation	(0.5)	(1.0)	(0.6)
Prior year taxes	(1.1)	0.6	(1.6)
Government incentives[3]	(0.5)	(0.6)	(0.6)
Changes in tax laws and rates	(0.2)	(0.4)	(0.3)
Tax impact from (deductible) nondeductible items	(1.9)	0.2	(0.8)
Valuation allowance	0.0	(4.4)	(8.1)
Other items, net	(0.2)	0.1	(0.8)
Effective tax rate	**17.4 %**	**18.1 %**	**18.3 %**

[1] Our effective tax rate reflects the benefit of our global operations where certain income or loss is taxed at rates higher or lower than the Netherlands' statutory income tax rate of 25.8% as well as the benefit of some income being partially exempt from income taxes. These foreign tax benefits are due to a combination of favorable tax laws, regulations and exemptions in certain jurisdictions. Partial tax exemptions exist on foreign income primarily derived from operations in Germany, the Netherlands and Singapore. Further, we have intercompany financing arrangements in which the intercompany income is nontaxable in Dubai or partially exempt or subject to lower statutory income tax rates.

[2] In 2020, we recorded tax accruals related to the potential nondeductibility of the $95.0 million expense reimbursement paid in connection with the unsuccessful acquisition attempt by Thermo Fisher.

[3] Government incentives include tax credits in the U.S. relating to research and development expense and other government incentives.

We conduct business globally and, as a result, file numerous consolidated and separate income tax returns in the Netherlands, Germany, and the U.S. federal jurisdiction, as well as in various other state and foreign jurisdictions. In the normal course of business, we are subject to examination by taxing authorities throughout the world. Tax years in the Netherlands are potentially open back to 2010 for income tax examinations by the Netherlands taxing authority. The German group is open to examination for the tax years starting in 2017 and in 2022, the German taxing authority commenced an examination for the

2017-2019 tax years. The U.S. consolidated group is subject to federal and most state income tax examinations by taxing authorities beginning with the year ending December 31, 2019 through the current period. Our other subsidiaries, with few exceptions, are no longer subject to income tax examinations by taxing authorities for years before 2018.

Changes in the amount of unrecognized tax benefits for the years ended December 31, 2022, 2021 and 2020 are as follows:

(in thousands)	**2022**	2021	2020
Balance at beginning of year	$103,618	$100,092	$58,002
Additions based on tax positions related to the current year	9,754	6,629	31,758
Additions for tax positions of prior years	4,544	5,036	3,560
Decrease for tax position of prior years	(8,958)	(266)	(57)
Decrease related to settlements	(23,346)	—	—
Decrease due to lapse of statute of limitations	(580)	(344)	(520)
(Decrease) increase from currency translation	(5,749)	(7,529)	7,349
Balance at end of year	**$79,283**	**$103,618**	**$100,092**

At December 31, 2022 and 2021, our net unrecognized tax benefits totaled approximately $79.3 million and $103.6 million, respectively, which, if recognized, would favorably affect our effective tax rate in any future period. It is reasonably possible that approximately $17.4 million of the unrecognized tax benefits may be released or utilized during the next 12 months due to lapse of statute of limitations or settlements with taxing authorities. However, various events could cause our current expectations to change in the future. The above unrecognized tax benefits, if ever recognized in the financial statements, would be recorded in the statements of income as part of income tax expense.

Our policy is to recognize interest accrued related to an underpayment of income taxes in interest expense and penalties within income tax expense. For the years ended December 31, 2022, 2021 and 2020, we recognized (income) expense, net for interest and penalties of $(0.4) million, $(0.6) million and $1.9 million, respectively. At December 31, 2022 and 2021, we have accrued interest and penalties of $3.5 million and $3.8 million, respectively, which are not included in the table above.

At December 31, 2022 and 2021, in the consolidated balance sheets we have recorded deferred tax assets of $56.3 million and $72.9 million in other long-term assets, and deferred tax liabilities of $17.5 million and $37.6 million in other long-term liabilities, respectively. The components of the net deferred tax assets at December 31, 2022 and 2021 are as follows:

Deferred tax asset (liability) (in thousands)	2022	2021
Net operating loss and tax credit carryforward	$53,155	$67,853
Intangible assets	33,510	4,066
Accrued and other liabilities	27,544	26,513
Share-based compensation	21,792	20,464
Property, plant and equipment	4,032	6,046
Convertible notes	3,621	5,231
Inventories	3,003	4,790
Disallowed interest carryforwards	1,511	16,219
Other	6,479	7,287
Deferred tax assets before valuation allowance	154,647	158,469
Valuation allowance	(21,265)	(21,326)
Deferred tax assets, net after valuation allowance	$133,382	$137,143
Intangible assets	($55,921)	($62,585)
Property, plant and equipment	(33,847)	(29,241)
Inventories	(820)	(3,935)
Other	(3,997)	(6,077)
Deferred tax liabilities	($94,585)	($101,838)
Deferred tax assets, net	**$38,797**	**$35,305**

As of December 31, 2022, the valuation allowance principally relates to net operating loss carryforwards. A deferred tax asset can only be recognized to the extent it is "more likely than not" that the assets will be realized. Judgments around realizability depend on the availability and weight of both positive and negative evidence. At December 31, 2022, we had $375.1 million in total net operating loss (NOL) carryforwards which included $131.9 million for the U.S., $90.3 million for Germany, $49.4 million for UK, $39.5 million for the Netherlands, and $64.0 million for other foreign jurisdictions. The NOL carryforwards in Germany, the Netherlands and UK carryforward indefinitely. The entire NOL carryforward in the U.S. is subject to limitations under Section 382 of the U.S. Internal Revenue Code. The NOL carryforwards in the U.S. expire between 2024 and 2034. NOL carryforwards of $22.5 million in other foreign jurisdictions expire between 2023 and 2031 while the remainder can be carried forward indefinitely. At December 31, 2022, tax credits total $7.6 million and expire between 2031 and 2040.

The United States Coronavirus Aid, Relief, and Economic Security Act (CARES Act) was enacted on March 27, 2020. The CARES Act and related notices include several significant provisions. The primary impact from the CARES Act is that it allowed us to carry back U.S. NOLs for five years.

The changes in the valuation allowance for the years ended December 31, 2022, 2021 and 2020 were as follows:

(in thousands)	**2022**	2021	2020
Balance at beginning of year	($21,326)	($37,332)	($87,619)
Additions charged to income tax provision	(4,470)	(620)	(6,614)
Deductions charged to income tax provision	4,287	28,251	42,204
(Additions) reductions charged to additional paid-in capital	—	(13,513)	13,513
Currency translation	244	1,888	1,184
Balance at end of year	**($21,265)**	**($21,326)**	**($37,332)**

In 2021, $13.5 million of the valuation allowance, which had been established in additional paid-in capital in 2020 related to the 2027 Convertible Notes, was reversed due to adopting ASU 2020-06.

As of December 31, 2022, a deferred tax liability has not been recognized for residual income taxes in the Netherlands on the undistributed earnings of the majority of our foreign subsidiaries as these earnings are considered to be either indefinitely reinvested or can be repatriated tax free under the Dutch participation exemption. The indefinitely reinvested earnings retained of our subsidiaries that would be subject to tax if distributed amounted to $984.4 million at December 31, 2022. Estimating the amount of the unrecognized deferred tax liability on indefinitely reinvested foreign earnings is not practicable. Should the earnings be remitted as dividends, we may be subject to taxes including withholding tax. We have $16.8 million of undistributed earnings that we do not consider indefinitely reinvested and have recorded a deferred tax liability at December 31, 2022 and 2021 of $1.0 million and $1.5 million, respectively.

18. Equity

Shares

The authorized classes of our shares consist of Common Shares (410 million authorized), Preference Shares (450 million authorized) and Financing Preference Shares (40 million authorized). All classes of shares have a par value of €0.01. No Financing Preference Shares or Preference Shares have been issued. Common Shares are translated to U.S. dollars at the foreign exchange rates in effect when the shares are issued.

Issuance and Conversion of Warrants

In connection with the issuance of the Cash Convertible Notes as described in Note 16 "Debt", we issued Warrants as summarized in the table below. The number of warrants and exercise prices are subject to customary adjustments under certain circumstances. The proceeds, net of issuance costs, from the sale of the Warrants are included as additional paid-in capital in the accompanying consolidated balance sheets.

The Warrants are exercisable only upon expiration. For each Warrant that is exercised, we will deliver to the holder a number of shares of our common stock equal to the amount by which the settlement price exceeds the exercise price, divided by the settlement price, plus cash in lieu of any fractional shares. The Warrants could separately have a dilutive effect on shares of our common stock to the extent that the market value per share of our common stock exceeds the applicable exercise price of the Warrants (as measured under the terms of the Warrants).

Cash convertible notes	Issued on	Number of share warrants issued (in millions)	Exercise price per share	Proceeds from issuance of warrants, net of issuance costs (in millions)	Warrants expire over a period of 50 trading days beginning on
2023	September 13, 2017	9.7	$49.9775	$45.3	June 26, 2023
2024	November 13, 2018	10.9	$50.2947	$72.4	August 27, 2024

During 2020, 0.8 million common shares were issued in connection with the early conversion of 4.2 million warrants related to the 2021 Notes which resulted in a $7.5 million decrease to additional paid-in capital, a $22.7 million decrease in retained earnings, and a decrease of $30.3 million in treasury shares.

The remaining warrants related to the 2021 Notes of 6.3 million were terminated in 2020, resulting in a cash payment of $174.6 million, a $30.3 million decrease to additional paid-in capital and a $144.3 million decrease in retained earnings.

Share Repurchase Programs

On July 12, 2021, we announced our seventh share repurchase program of up to $100 million of our common shares. During 2021, we repurchased 1.9 million QIAGEN shares for $100.0 million (including transaction costs). This program ended on October 29, 2021.

On May 6, 2019, we announced our sixth share repurchase program of up to $100 million of our common shares. During 2020, we repurchased 1.3 million QIAGEN shares for $64.0 million (including transaction costs). This program ended on December 17, 2020.

The cost of repurchased shares is included in treasury stock and reported as a reduction in total equity when a repurchase occurs. Repurchased shares will be held in treasury in order to satisfy various obligations, which include exchangeable debt instruments, warrants and employee share-based remuneration plans.

Accumulated Other Comprehensive Loss

The following table is a summary of the components of accumulated other comprehensive loss as of December 31, 2022 and 2021:

(in thousands)	**2022**	2021
Net unrealized (loss) income on hedging contracts, net of tax	($15,637)	$1,245
Net unrealized gain (loss) on pension, net of tax	645	(588)
Foreign currency effects from intercompany long-term investment transactions, net of tax of $13.2 million and $12.4 million, respectively	(33,311)	(30,768)
Foreign currency translation adjustments	(355,788)	(296,559)
Accumulated other comprehensive loss	**($404,091)**	**($326,670)**

19. Earnings Per Common Share

We present basic and diluted earnings per common share. Basic earnings per common share is calculated by dividing the net income by the weighted average number of common shares outstanding. Diluted earnings per common share reflect the potential dilution of earnings that would occur if all "in the money" securities to issue common shares were exercised.

The following schedule summarizes the information used to compute earnings per common share for the years ended December 31, 2022, 2021 and 2020:

(in thousands, except per share data)	**2022**	2021	2020
Net income	$423,211	$512,599	$359,188
Weighted average number of common shares used to compute basic earnings per common share	227,577	227,983	228,427
Dilutive effect of outstanding stock options and restrictive stock units	2,555	3,403	3,350
Dilutive effect of outstanding warrants	4	648	2,437
Weighted average number of common shares used to compute diluted earnings per common share	230,136	232,034	234,214
Outstanding stock options and awards having no dilutive effect, not included in above calculation	146	8	11
Outstanding warrants having no dilutive effect, not included in above calculation	20,556	19,912	26,438
Basic earnings per common share	$1.86	$2.25	$1.57
Diluted earnings per common share	$1.84	$2.21	$1.53

For purposes of considering the 2027 Notes, as discussed further in Note 16 "Debt", in determining diluted earnings per common share, only an excess of the conversion value over the principal amount would have a dilutive impact using the treasury stock method. Since the 2027 Notes were out of the money and anti-dilutive during the period from December 17, 2020 through December 31, 2022, they were excluded from the diluted earnings per common share calculation in 2020, 2021 and 2022.

20. Commitments and Contingencies

Licensing and Purchase Commitments

We have licensing agreements with companies, universities and individuals, some of which require certain up-front payments. Royalty payments are required on net product sales ranging from 0.45 percent to 25 percent of covered products or based on quantities sold. Several of these agreements have minimum royalty requirements. The accompanying consolidated balance sheets include accrued royalties relating to these agreements in the amount of $12.9 million and $12.6 million at December 31, 2022 and 2021, respectively. Royalty expense relating to these agreements amounted to $15.5 million, $18.5 million, and $12.2 million for the years ended December 31, 2022, 2021 and 2020, respectively. Royalty expense is primarily recorded in cost of sales, with a small portion recorded as research and development expense depending on the use of the technology under license. Some of these agreements also have minimum raw material purchase requirements and requirements to perform specific types of research.

At December 31, 2022, we had commitments to purchase goods or services, and for future license and royalty payments. They are as follows:

Years ending December 31, (in thousands)	Purchase Commitments	License & Royalty Commitments
2023	$49,311	$3,804
2024	32,559	2,075
2025	22,362	1,718
2026	11,296	1,133
2027	11,508	1,170
Thereafter	211	8,641
	$127,247	**$18,541**

Included in the table above are license and royalty commitments totaling $8.6 million that will be paid to related parties through 2040.

Contingent Consideration Commitments

Pursuant to the purchase agreements for certain acquisitions we could be required to make additional contingent cash payments for a previous business combination based on the achievement of certain FDA approval milestones. Potential milestone payments total $20.7 million, of which $8.9 million may be triggered by the end of 2023 and $11.8 million by the end of 2024. Of the total milestone payments, $8.2 million is included in accrued and other current liabilities and $9.9 million is included in other long-term liabilities in the accompanying consolidated balance sheet as of December 31, 2022.

Employment Agreements

Certain of our employment contracts contain provisions which guarantee the payments of certain amounts in the event of a change in control, as defined in the agreements, or if the executive is terminated for reasons other than cause, as defined in the agreements. At December 31, 2022, the commitment under these agreements totaled $9.4 million.

Contingencies

In the ordinary course of business, we provide a warranty to customers that our products are free of defects and will conform to published specifications. Generally, the applicable product warranty period is one year from the date of delivery of the product to the customer or of site acceptance, if required.

Additionally, we typically provide limited warranties with respect to our services. We provide for estimated warranty costs at the time of the product sale. The changes in the carrying amount of warranty obligations for the years ended December 31, 2022 and 2021 are as follows:

(in thousands)	2022	2021
Balance at beginning of year	$6,324	$4,813
Provision charged to cost of sales	4,606	7,518
Usage	(4,517)	(5,774)
Adjustments to previously provided warranties, net	(1,277)	(43)
Currency translation	(237)	(190)
Balance at end of year	**$4,899**	**$6,324**

Litigation

From time to time, we may be party to legal proceedings incidental to our business. As of December 31, 2022, certain claims, suits or legal proceedings arising out of the normal course of business have been filed or were pending against QIAGEN or our subsidiaries. These matters have arisen in the ordinary course and conduct of business, as well as through acquisition. Because litigation is inherently unpredictable and unfavorable resolutions could occur, assessing litigation contingencies is highly subjective and requires judgments about future events. Although it is not possible to predict the outcome of such litigation, we assess the degree of probability and evaluate the reasonably possible losses that we could incur as a result of these matters. We accrue for any estimated loss when it is probable that a liability has been incurred and the amount of probable loss can be estimated. Litigation accruals recorded in accrued and other current liabilities as of December 31, 2022 and 2021 totaled $6.5 million and $5.7 million, respectively. As of December 31, 2022, $4.7 million was accrued in other long-term liabilities in the accompanying consolidated balance sheet.

We are not party to any material legal proceeding as of the date of this report except for the matters listed below.

Patent Litigation

Archer DX

In 2018, ArcherDX (a company which spun out as an independent company in conjunction with QIAGEN's acquisition of Enzymatics in 2015 and was later acquired by Invitae in 2021) and Massachusetts General Hospital (MGH) sued QIAGEN for patent infringement. In August 2021, a federal jury ruled that QIAGEN infringed two patents owned by ArcherDX and awarded damages of $4.7 million which were accrued in 2021 and as of December 31, 2022 are included in other long-term liabilities in the accompanying consolidated balance sheet. We plan to appeal the verdict as soon as the final verdict is completed.

Bio-Rad Laboratories, Inc.

In April 2022, QIAGEN filed a lawsuit in a U.S. federal court against Bio-Rad Laboratories, Inc. (Bio-Rad) seeking a declaratory judgment of non-infringement of certain Bio-Rad patents related to digital PCR technology. We are seeking judgment that we have not infringed and do not infringe any claims of the Bio-Rad patents, and have not made, used, sold, offered for sale, or imported any products that infringe any of the patents' claims, directly or indirectly. We are also seeking attorneys' fees, costs, and expenses and any other relief determined by the court.

Becton Dickinson

On September 17, 2020, QIAGEN acquired NeuMoDx. As part of the purchase, QIAGEN also acquired preexisting contingencies and became defendant in ongoing litigation matters pertaining to preexisting claims made by Becton Dickinson (BD) and subsidiaries over patent infringement. In addition to patent infringement allegations, the litigation involved trade secret misappropriation and other non-patent claims relating to NeuMoDx and former NeuMoDx officers, before the acquisition by QIAGEN. On September 26, 2021, through mediation, the parties reached a preliminary settlement of $53.0 million due to BD for the past infringements of NeuMoDx prior to QIAGEN's acquisition. On November 5, 2021, QIAGEN and BD reached an agreement to settle their ongoing litigation in the U.S. District Court of the District of Delaware and certain inter partes review proceedings. As part of the settlement, QIAGEN paid $53.0 million to BD in November 2021 and all claims asserted against QIAGEN, as well as counterclaims asserted against BD, were dismissed.

Other Litigation Matters

For all other matters, a total of $6.5 million is accrued as of December 31, 2022 in accrued and other current liabilities. The estimated range of possible losses for these other matters as of December 31, 2022 is between zero and $8.0 million.

Based on the facts known to QIAGEN and after consultation with legal counsel, management believes that such litigation will not have a material adverse effect on our financial position or results of operations above the amounts accrued. However, the outcome of these matters is ultimately uncertain, thus any settlements or judgments against us in excess of management's expectations could have a material adverse effect on our financial position, results of operations or cash flows.

21. Segment Information

We operate as one operating segment. We have a common basis of organization, we make decisions with regards to business operations and resource allocation based on evaluations of QIAGEN as a whole and our products and services are offered globally. Product category and geographic information follows below.

Product Category Information

Net sales for the product categories are attributed based on those revenues related to sample and assay products and similarly related revenues including bioinformatics solutions, and revenues derived from instrumentation sales. Refer to Note 4 "Revenue" for disaggregation of revenue based on product categories, product type and customer class.

Geographical Information

Net sales are attributed to countries based on the location of the customer. QIAGEN primary manufacturing facilities are located in Germany, China, and the United States that supply products to customers as well as QIAGEN subsidiaries in other countries. The intercompany portions of such net sales are excluded to derive consolidated net sales. No single customer represents more than ten percent of consolidated net sales. Our country of domicile is the Netherlands, which reported net sales of $31.5 million, $28.3 million and $17.8 million for the years ended 2022, 2021 and 2020, respectively, and these amounts are included in the line item Europe, Middle East and Africa as shown in the table below.

Net sales (in thousands)	**2022**	2021	2020
Americas:			
United States	$909,616	$909,690	$728,577
Other Americas	88,139	97,686	96,880
Total Americas	997,755	1,007,376	825,457
Europe, Middle East and Africa	733,469	814,417	682,289
Asia Pacific, Japan and Rest of World	410,294	429,864	362,600
Total	**$2,141,518**	**$2,251,657**	**$1,870,346**

Long-lived assets include property, plant and equipment. The Netherlands, which is included in the balances for Europe, reported long-lived assets of $1.1 million as of December 31, 2022 and 2021.

Long-lived assets (in thousands)	2022	2021
Americas:		
United States	$161,645	$158,949
Other Americas	2,997	2,805
Total Americas	164,642	161,754
Europe, Middle East and Africa:		
Germany	400,009	373,609
Other Europe, Middle East and Africa	75,045	78,608
Total Europe, Middle East and Africa	475,054	452,217
Asia Pacific and Japan	22,474	24,212
Total	**$662,170**	**$638,183**

22. Share-Based Compensation

We adopted the QIAGEN N.V. Amended and Restated 2005 Stock Plan (the 2005 Plan) in 2005 and the QIAGEN N.V. 2014 Stock Plan (the 2014 Plan) in 2014. The 2005 Plan expired by its terms in April 2015 and no further awards will be granted under the 2005 Plan. The plans allow for the granting of stock rights and incentive stock options, as well as non-qualified options, stock grants and stock-based awards, generally with terms of up to 3 years, with previous grants through 2020 having terms of 5 years subject to earlier termination in certain situations. The vesting and exercisability of certain stock rights will be accelerated in the event of a Change of Control, as defined in the plans. All option grants have been at the market value on the grant date or at a premium above the closing market price on the grant date. We issue Treasury Shares to satisfy option exercises and award releases and had approximately 11.8 million Common Shares reserved and available for issuance under the 2005 and 2014 Plans at December 31, 2022.

Stock Options

We have not granted stock options since 2013. A summary of the status of employee stock options as of December 31, 2022 and changes during the year then ended is presented below:

All Employee Options	Number of Shares (in thousands)	Weighted Average Exercise Price	Weighted Average Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding at January 1, 2022	18	$17.79		
Exercised	(7)	$16.55		
Expired	(2)	$18.68		
Outstanding at December 31, 2022	**9**	**$18.68**	**0.41**	**$272**
Vested at December 31, 2022	9	$18.68	0.41	$272
Vested and expected to vest at December 31, 2022	9	$18.68	0.41	$272

The total intrinsic value of options exercised during the years ended December 31, 2022, 2021 and 2020 was $0.2 million, $14.4 million and $6.5 million, respectively. The actual tax benefit for the tax deductions from option exercises totaled $0.1 million, $2.2 million and $1.3 million during the years ended December 31, 2022, 2021 and 2020, respectively. At December 31, 2022, there was no unrecognized share-based compensation expense related to employee stock option awards.

At December 31, 2022, 2021 and 2020, 9 thousand, 18 thousand and 0.4 million options were exercisable at a weighted average price of $18.68, $17.79 and $19.28 per share, respectively. The options outstanding at December 31, 2022 expire in 2023.

Stock Units

Stock units represent rights to receive Common Shares at a future date and include restricted stock units which are subject to time-vesting only and performance stock units which include performance conditions in addition to time-vesting. The final number of performance stock units earned is based on the performance achievement which for some grants can reach up to 200% of the granted shares. There is no exercise price and the fair market value at the time of the grant is recognized over the requisite vesting period. The fair market value is determined based on the number of stock units granted and the market value of our shares on the grant date. Pre-vesting forfeitures were estimated to be approximately 6.9%. At December 31, 2022, there was $79.7 million remaining in unrecognized compensation cost including estimated forfeitures related to these awards, which is expected to be recognized over a weighted average period of 1.58 years. The weighted average grant date fair value of stock units granted during the years ended December 31, 2022, 2021 and 2020 was $45.49, $48.77 and $36.92, respectively. The total fair value of stock units that vested during the years ended December 31, 2022, 2021 and 2020 was $55.8 million, $52.6 million and $29.3 million, respectively.

A summary of stock units as of December 31, 2022 and changes during the year are presented below:

Stock Units	Stock Units (in thousands)	Weighted Average Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding at January 1, 2022	3,981		
Granted	955		
Vested	(1,164)		
Forfeited	(1)		
Outstanding at December 31, 2022	**3,771**	**1.58**	**$188,036**
Vested and expected to vest at December 31, 2022	3,467	1.55	$172,922

We net share settle for the tax withholding upon the vesting of awards. Shares are issued on the vesting dates net of the applicable statutory tax withholding to be paid by us on behalf of our employees. As a result, fewer shares are issued than the number of stock units outstanding. We record a liability for the tax withholding to be paid by us as a reduction to treasury shares.

Compensation Expense

Share-based compensation expense before taxes for the years ended December 31, 2022, 2021 and 2020 totaled approximately $49.5 million, $38.4 million and $40.9 million, respectively, as shown in the table below.

(in thousands)	**2022**	2021	2020
Cost of sales	$2,577	$40	$2,897
Research and development	6,504	4,909	7,014
Sales and marketing	16,076	13,630	15,889
General and administrative	24,350	19,812	15,136
Share-based compensation expense	49,507	38,391	40,936
Less: Income tax benefit [1]	10,703	8,956	9,552
Net share-based compensation expense	**$38,804**	**$29,435**	**$31,384**

[1] Does not include the excess tax benefit realized for the tax deductions of the share-based payment arrangements which totaled $2.7 million, $6.5 million and $2.5 million, respectively, for the years ended December 31, 2022, 2021 and 2020.

The lower share-based compensation expense in cost of sales in 2021 resulted from forfeitures upon the separation of an executive who received a cash severance payment in lieu of accelerated vesting upon separation per the terms of the arrangement. The cash separation accrual offset the share-based compensation forfeiture.

23. Employee Benefits

We maintain various benefit plans, including defined contribution and defined benefit plans. Our U.S. defined contribution plan is qualified under Section 401(k) of the Internal Revenue Code and covers substantially all U.S. employees. Participants may contribute a portion of their compensation not exceeding a limit set annually by the Internal Revenue Service. This plan includes a provision for us to match a portion of employee contributions. Total expense under the 401(k) plans, including the plans acquired via business acquisitions, was $4.5 million, $4.3 million and $3.6 million for the years ended December 31, 2022, 2021 and 2020, respectively. We also have a defined contribution plan which covers certain executives. We make matching contributions up to an established maximum. Matching contributions made to the plan, and expensed, totaled approximately $0.1 million for the year ended December 31, 2022 and $0.2 million for each year ended December 31, 2021 and 2020, respectively.

We have seven defined benefit, non-contributory retirement or termination plans that cover certain employees in Germany, France, Italy, Japan, Poland, Philippines and the United Arab Emirates. These defined benefit plans provide benefits to covered individuals satisfying certain age and/or service requirements. For certain plans, we calculate the vested benefits to which employees are entitled if they separate immediately. The benefits accrued on a pro-rata basis during the employees' employment period are based on the individuals' salaries, adjusted for inflation. The liability under the defined benefit plans was $7.2 million and $9.3 million as of December 31, 2022 and 2021, respectively, and is included as a component of other long-term liabilities on the accompanying consolidated balance sheets.

24. Related Party Transactions

From time to time, we have transactions with other companies in which we hold an interest, all of which are individually and in the aggregate immaterial, as summarized in the table below.

Net sales to related parties for the years ended December 31, 2022, 2021 and 2020 are as follows:

(in thousands)	**2022**	2021	2020
Net sales	$8,474	$9,089	$6,025

As of December 31, 2022 and 2021 balances with related parties are as follows:

(in thousands)	**2022**	2021
Accounts receivable	$5,136	$3,868
Prepaid expenses and other current assets	$11,929	$16,956
Accounts payable	$2,708	$4,149
Accrued and other current liabilities	$3,518	$1,558

Prepaid expenses and other current assets include loans receivable and supplier advances from companies with which we have an investment or partnership interest. As of December 31, 2022, prepaid expenses and other current assets includes a $10.6 million convertible note from Ellume Limited, Australia, which bears interest at 10% and was due on December 31, 2022. We retain this loan receivable, while fully reserved, as we await the outcome of the creditor arrangement. Additional financial impacts of these proceedings with this related party for the fiscal year ended December 31, 2022 include a $4.6 million

write off on advances to suppliers and a $12.8 million impairment loss on intangible assets, both recognized in restructuring, acquisition, integration and other, net in the accompanying consolidated statement of income. Refer to Note 11 "Goodwill and Intangible Assets".

As of December 31, 2021, the convertible note balance from this privately held company was carried at $10.0 million in prepaid expenses and other current assets. In addition, $4.3 million of customer advances held at December 31, 2021 were subsequently written off as part of the $4.6 million write off in 2022.

25. Subsequent Event

On January 3, 2023, we completed the acquisition of Verogen, Inc. as further described in Note 5 "Acquisitions".

Exhibit 2.13

In accordance with Instruction 2 to Item 601 of Regulation S-K, below is a schedule setting forth details in which the omitted loan agreements differ from the form of loan agreement that follows:

Currency	Notional Amount	Interest Rate	Maturity
EUR	€51.5 million	Floating 6M EURIBOR + 0.55%	July 2025
EUR	€62.0 million	Fixed 2.741%	July 2027
EUR	€29.5 million	Floating 6M EURIBOR + 0.70%	July 2027
EUR	€37.0 million	Fixed 3.044%	July 2029
EUR	€103.0 million	Floating 6M EURIBOR + 0.85%	July 2029
EUR	€9.5 million	Fixed 3.386%	July 2032
EUR	€7.5 million	Floating 6M EURIBOR + 1.0%	July 2032

Schuldscheindarlehensvertrag
(der „Darlehensvertrag“)
über ein Darlehen in Höhe von

Loan Agreement
(the “**Loan Agreement**”)
for a loan in the amount of

mit einem variablen Zinssatz
fällig am

with a floating rate
due on

arrangiert von der Bayerischen Landesbank, Commerzbank Aktiengesellschaft und DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, zusammen die „**Arrangeure**“ genannt

arranged by Bayerischen Landesbank, Commerzbank Aktiengesellschaft and DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, jointly the "**Arrangers**"

mit der Bayerischen Landesbank als „**Zahlstelle“**

with Bayerische Landesbank as the "**Paying Agent**"

Die
Bayerische Landesbank
Brienner Straße 18
80333 München

- nachfolgend die „**Darlehensgeberin**“ oder die **„Anfängliche Darlehensgeberin**“-

gewährt der

QIAGEN N.V.
Hulsterweg 82
5912 PL Venlo
Niederlande

- nachfolgend die „**Darlehensnehmerin**“ -

ein Darlehen (das „**Darlehen**“) im Gesamtnennbetrag von

(in Worten)

- Die Darlehensnehmerin und die Darlehensgeberin gemeinsam nachfolgend die „**Parteien**" -

§ 1 Auszahlung, Definitionen

(1) Das Darlehen wird am 13. Juli 2022 (der „**Auszahlungstag**“) nach Weisung der Darlehensnehmerin ausgezahlt, sofern die Auszahlungsvoraussetzungen nach Anlage 1 mindestens zwei (2) Bankarbeitstage vor dem Auszahlungstag erfüllt und an die Darlehensgeberin geliefert worden sind.

(2) Das Darlehen wird von den Arrangeuren im sogenannten „best efforts“-Verfahren platziert. Daher steht die Auszahlung des Darlehens an die Darlehensnehmerin unter dem weiteren Vorbehalt, dass die Darlehenssumme durch die gemäß § 9 (1) eintretenden Darlehens geberinnen valutagerecht und frei verfügbar zur Auszahlung an die Darlehensnehmerin bereitgestellt wird. Die Darlehensnehmerin kann eine Auszahlung nur in dem Umfang verlangen, in welchem die Darlehensmittel durch die eintretenden Darlehensgeberinnen zur Verfügung gestellt werden.

Bayerische Landesbank
Brienner Strasse 18
80333 Munich, Germany

- hereinafter the “**Lender**” or the “**Initial Lender**“ -

grants to

QIAGEN N.V.
Hulsterweg 82
5912 PL Venlo
The Netherlands

- hereinafter the “**Borrower**” -

a loan (the “**Loan**”) in the aggregate principal amount of

(in words)

- The Borrower and the Lender hereinafter jointly the “**Parties**” –

§ 1 Disbursement, Definitions

(1) The Loan shall be disbursed on 13 July 2022 (the “**Disbursement Date**”) in accordance with the instructions of the Borrower, provided that the conditions precedent listed in Annex 1 are delivered to the Lender at least two (2) Banking Days prior to the Disbursement Date.

(2) The Loan shall be placed by the Arrangers on a so-called “best efforts” basis. Thus, the disbursement of the Loan is further subject to the condition that the amount of the Loan is made available by the joining Lenders in accordance with § 9 (1) in same day and immediately available funds, freely transferable for disbursement to the Borrower. The Borrower acknowledges and agrees that it is only entitled to demand disbursement under the Loan to the extent funds are made available by the joining Lenders.

(3) Das Darlehen dient der allgemeinen Unternehmensfinanzierung einschließlich Übernahmen und Refinan zierungszwecken und die Darlehensnehmerin sichert zu und garantiert, dass das Darlehen von ihr auf eigene Rechnung beansprucht wird.

(3) The purpose of this Loan shall be general corporate financing, including acquisitions, and refinancing matters and the Borrower represents and warrants that the Loan is utilised by itself on its own account.

(4) In diesem Darlehensvertrag definierte Be griffe gelten, soweit nichts anderes bestimmt ist, für jede Erwähnung des definierten Begriffs in diesem Darlehensvertrag.

(4) Unless otherwise provided for herein, the definitions of terms in this Loan Agreement apply to every reference made herein to such defined terms.

„**Bankarbeitstag**“ bezeichnet jeden Tag, außer einem Samstag oder Sonntag, an dem (i) TARGET2 betriebsbereit ist und (ii) Banken in München und Düsseldorf für Bankgeschäfte geöffnet sind.

“**Banking Day**” means any day other than a Saturday or Sunday on which (i) TARGET2 is operating and (ii) banks in Munich and Düsseldorf are open for general business.

„**Darlehensgeberin**“ schließt alle Darlehens geberinnen ein, auf die nach § 9 dieses Darlehensvertrages die Vertragsstellung übertragen wird, sowie alle Rechtsnachfolger.

"Lender" includes all Lenders to whom the contractual position is transferred under the terms of § 9 of this Loan Agreement, as well as all legal successors.

„**Dritter**“ im Sinne von § 9 (1) ist jedes Kredit institut, jede Förderbank, jede Kapital verwaltungsgesellschaft, jedes Versiche rungsunternehmen, jedes Versorgungswerk und jeder Pensionsfonds, das bzw. der in einem Mitgliedsstaat des Europäischen Wirtschaftsraumes („EWR“) oder der Schweiz oder im Vereinigten Königreich ansässig ist.

“**Third Party**” for the purposes of § 9 para. 1 means any Credit Institution, Development Bank, Investment Management Company, Insurance Company, Pension Insurance Carrier or Pension Fund based in a member state of the European Economic Area (EAA) or Switzerland or in the United Kingdom.

„**ESG-Basisrating**“ bedeutet ein ESG-Rating von C+.

“**Base ESG Rating**” means an ESG Rating of C+.

„**ESG-Rating**“ bezeichnet das der Darlehensnehmerin von Zeit zu Zeit zugewiesene ESG-Rating, das vom ESG-Ratinganbieter gemäß dem letzten ESG-Bericht festgelegt wird.

“**ESG Rating**” means the ESG rating assigned to the Borrower from time to time, determined by the ESG Rating Provider as set out in the latest ESG Report.

„**ESG-Ratinganbieter**“ bezeichnet ISS Corporate Solutions, Inc., ein unabhängiges Forschungsunternehmen für Nachhaltigkeit und Corporate Governance, oder jeden anderen Anbieter des ESG-Berichts, der ISS Corporate Solutions, Inc. ersetzt.

“**ESG Rating Provider**” means ISS Corporate Solutions, Inc., an independent research company for sustainability and corporate governance, or any other provider of the ESG Report replacing ISS Corporate Solutions, Inc.

„**ESG-Bericht**“ bezeichnet das Dokument, das das ESG-Rating der Darlehensnehmerin enthält, das vom ESG-Ratinganbieter erstellt wurde.

“**ESG Report**” means the document which contains the ESG Rating of the Borrower, which has been prepared by the ESG Rating Provider.

„**Kapitalverwaltungsgesellschaft**“ bezeichnet eine Kapitalverwaltungsgesellschaft im Sinne von § 2 Abs. 1 Nr. 3b KWG oder eine EU-Verwaltungsgesellschaft im Sinne von § 2 Abs. 1 Nr. 3c KWG, soweit diese zum entsprechenden Geschäftsbetrieb im Inland oder einem Mitglieds staat des Europäischen Wirtschaftsraumes („EWR“) oder der Schweiz oder im Vereinigten Königreich zugelassen und dort beaufsichtigt ist.	“**Investment Management Company**” shall mean an investment management company within the meaning of section 2 para. 1 no. 3b of the German Banking Act (KWG) or an EU-management company within the meaning of section 2 para. 1 no. 3c of the German Banking Act (KWG), provided that it is licensed to do such business and regulated within Germany, in any member state of the European Economic Area (EEA) or in Switzerland or in the United Kingdom
„**Kreditinstitut**“ bezeichnet ein Unternehmen im Sinne von § 1 Abs. 1 KWG, soweit dieses zum entsprechenden Geschäftsbetrieb im Inland oder einem Mitgliedsstaat des Europäischen Wirtschaftsraumes („EWR“) oder der Schweiz oder im Vereinigten Königreich zugelassen und dort beaufsichtigt ist.	“**Credit Institution**” shall mean a company within the meaning of section 1 para. 1 German Banking Act (KWG), provided that it is licensed to do such business and regulated within Germany, in any member state of the European Economic Area (EEA) or in Switzerland or in the United Kingdom.
„**Förderbank**“ bezeichnet ein Förderinstitut der öffentlichen Hand (wie z.B. LfA, KfW und vergleichbare Institute).	“**Development Bank**” shall mean public sector development institutions (such as LfA, KfW or similar institutions).
„**Oberer ESG-Ratingbereich**“ bedeutet B- oder höher im ESG-Bericht des ESG-Ratinganbieters.	“**Upper ESG Rating Range**” means B- or higher in the ESG Report of the ESG Rating Provider.
„**Original ESG-Bericht**“ bezeichnet den ESG-Bericht vom 2. Juli 2020, in dem ein ESG-Rating von C+ festgelegt wurde und der den Darlehensgeberinnen zur Verfügung gestellt wurde.	“**Original ESG Report**” means the ESG Report dated 2 July 2020 confirming an ESG Rating of C+, a copy of which has been made available to the Lenders.
„**Pensionsfonds**“ bezeichnet einen Pensionsfonds im Sinne von § 236 VAG soweit dieser zum entsprechenden Geschäftsbetrieb im Inland oder einem Mitgliedsstaat des Europäischen Wirtschaftsraumes („EWR“) oder der Schweiz oder im Vereinigten Königreich zugelassen und dort beaufsichtigt ist.	“**Pension Fund**” shall mean a pension fund within the meaning of section 236 of the Supervision of German Insurance Companies Act (VAG), provided that it is licensed to do such business and regulated within Germany, in any member state of the European Economic Area (EEA) or in Switzerland or in the United Kingdom.
„**Unterer ESG-Ratingbereich**“ bedeutet C oder niedriger im ESG-Bericht des ESG-Ratinganbieters.	“**Lower ESG Rating Range**” means C or lower in the ESG Report of the ESG Rating Provider.
„**Versicherungsunternehmen**“ bezeichnet ein Versicherungsunternehmen im Sinne von § 2 Abs. 1 Nr. 4 KWG, soweit dieses zum entsprechenden Geschäftsbetrieb im Inland oder einem Mitgliedsstaat des Europäischen Wirtschaftsraumes („EWR“) oder der Schweiz oder im Vereinigten Königreich zugelassen und dort beaufsichtigt ist.	“**Insurance Company**” shall mean an insurance company within the meaning of section 2 para. 1 no. 4 of the German Banking Act (KWG), provided that it is licensed to do such business and regulated within Germany, in any member state of the European Economic Area (EEA) or in Switzerland or in the United Kingdom.

„**Versorgungswerk**“ bezeichnet die nach den betreffenden deutschen Landesgesetzen errichteten und staatlich beaufsichtigten berufsständischen öffentlich-rechtlichen Ein richtungen für die Altersvorsorge der Mitglieder des jeweiligen Berufsstands.

„**Finanzverbindlichkeit“** bedeutet jegliche Verbindlichkeiten:

(a) aus der Aufnahme von Finanzierungsmitteln,

(b) aus der Mittelaufnahme aus einer Wechselkreditlinie oder einer beleglosen Entsprechung;

(c) aus der Mittelaufnahme aufgrund einer Ankaufsfazilität für Schuldscheine oder aus der Ausgabe von Bonds, Schuldscheinen, Schuld verschreibungen, Schuldtiteln oder ähnlichen Instrumenten;

(d) aus dem Betrag einer Verbindlichkeit hinsichtlich Leasing- oder Mietkaufverträgen, die nach US-GAAP als Finanzierungsleasing (finance oder capital lease) zu behandeln sind, mit Ausnahme derjenigen Verträge, die nach US-GAAP per Datum dieses Darlehensvertrags als Operating-Leasing behandelt würden;

(e) aus verkauften oder diskontierten Forderungen (soweit nicht ohne Rückgriffsrecht verkauft oder diskontiert);

(f) aus dem Kaufpreis von Vermögenswerten, soweit dieser vor oder nach dem Erwerb oder der Inbesitznahme seitens der haftenden Partei, zahlbar ist und dies in erster Linie zum Zweck der Aufnahme von Finanzmitteln vereinbart wurde, es sei denn, die Vorauszahlung oder der Zahlungsaufschub wurde über einen Zeitraum von höchstens 120 Tagen gewährt;

(g) aus Derivategeschäften, welche zum Schutz vor Wertschwankungen oder zu deren Nutzung im Kontext der Zins- und Währungsabsicherung abgeschlossen wurden (wobei zur Bewertung des Derivategeschäfts nur der aktuelle Marktwert berücksichtigt wird);

“**Pension Insurance Carrier**” (*Versorgungswer*k) means any professional public organisation for pension schemes for members of the respective profession established and regulated under the respective German state Laws.

“**Financial Indebtedness**” means any indebtedness for or in respect of:

(a) moneys borrowed;

(b) any amount raised by acceptance under any acceptance credit facility or dematerialized equivalent;

(c) any amount raised pursuant to any note purchase facility or the issue of bonds, notes, debentures, loan stock or any similar instrument;

(d) the amount of any liability in respect of any lease or hire purchase contract which would, in accordance with US-GAAP, be treated as a finance lease or capital lease other than any lease which, in accordance with US-GAAP as at the date of this Agreement, would have been treated as an operating lease;

(e) receivables sold or discounted (other than any receivables to the extent they are sold or discounted on a non-recourse basis);

(f) acquisition costs of any asset to the extent payable before or after the time of acquisition or possession by the party liable where arranged primarily as a method of raising finance except where payment is advanced or deferred for not more than 120 calendar days;

(g) any derivative transaction entered into in connection with protection against or benefit from fluctuation in connection with interest or currency hedges (and, when calculating the value of any derivative transaction, only the marked to market value shall be taken into account);

(h) aus einer Rückhaftungsverpflichtung für eine Garantie, eine Schadloshaltung, ein Haftungsversprechen, ein Standby- oder Dokumentenakkreditiv oder sonstige von einer Bank oder einem Finanzinstitut für eine der unter den vorstehenden Buchstaben (a) bis (g) genannten Positionen ausgegebene Instrumente; und

(i) aus dem Betrag einer Verbindlichkeit hinsichtlich einer Garantie oder Schadloshaltung für eine der unter den

(h) any counter-indemnity obligation in respect of a guarantee, indemnity, bond, standby or documentary letter of credit or any other instrument issued by a bank or financial institution in respect of any items referred to in paragraphs (a) to (g) above; and

(i) the amount of any liability in respect of any guarantee or indemnity for any of the items referred to in paragraphs (a) to (h)

Ein „**Kontrollwechsel**“ bedeutet in Bezug auf die Darlehensnehmerin, wenn nach dem Vertragsdatum

A “**Change of Control**” means with respect to the Borrower if at any time after the date hereof

(i) eine Person (mit Ausnahme von Stichting Preferente Aandelen Qiagen) mindestens 50% der Stimmrechte an der Darlehensnehmerin hält (einschließlich der Stimmrechte, die die Person gemäß nachstehendem Absatz zugerechnet bekommt), oder

(i) a person (other than Stichting Preferente Aandelen Qiagen) holds at least 50 per cent. of the voting rights in the Borrower (including voting rights attributed to such person pursuant to the following paragraph), or

(ii) sich die Gegenstandsklausel der Satzung (*doelomschrijving*) von Stichting Preferente Aandelen Qiagen wesentlich gegenüber dem derzeitigen Wortlaut ändert, sofern zu diesem Zeitpunkt Stichting Preferente Aandelen Qiagen mindestens 50 % der Stimmrechte an der Darlehensnehmerin hält (einschließlich der Stimmrechte, die diese Person gemäß nachstehendem Absatz zugerechnet bekommt).

(ii) the description in the objects clause in the articles (doelomschrijving) of Stichting Preferente Aandelen Qiagen is materially changed from the description as at the date hereof, if at that time Stichting Preferente Aandelen Qiagen holds at least 50 per cent. of the voting rights in the Borrower (including voting rights attributed to such person pursuant to the following paragraph).

Für diese Zwecke der Definition „Kontrollwechsel“ gilt, dass eine Person 50 % der Stimmrechte an der Darlehensnehmerin hält, wenn sie oder eine oder mehrere ihrer Tochtergesellschaften - unabhängig davon, ob gemäß einem Vertrag mit anderen Stimmberechtigten (*stemgerechtigden*) oder anderweitig - allein oder gemeinsam mehr als 50 % der Stimmrechte in der Hauptversammlung (*algemene vergadering*) der Darlehensnehmerin ausüben können.

For the purpose of the definition of “Change of Control”, a person shall be deemed to hold 50 per cent. of the voting rights in the Borrower if that person, or one or more of its Subsidiaries, whether or not pursuant to an agreement with other persons entitled to vote (stemgerechtigden) can, alone or together, exercise more than 50 per cent. of the voting rights in the general meeting of shareholders (algemene vergadering) of the Borrower.

„**Konzern**“ bezeichnet die Darlehensnehmerin und alle Tochtergesellschaften.

“**Group**” designates the Borrower and its respective Subsidiaries.

„**TARGET2**“ bezeichnet das europäische Echtzeit-Brutto-Zahlungssystem (Trans-European Automated Realtime Gross Settlement Express Transfer System 2), das eine einheitliche gemeinsame Plattform nutzt und am 19. November 2007 in Betrieb genommen wurde

„**Tochtergesellschaft**" ist jede juristische Person, Gesellschaft oder sonstige Person, die von einer anderen Person direkt oder indirekt kontrolliert wird.

Eine Person wird von einer anderen "kontrolliert", wenn:

(a) diese andere Person (rechtlich oder wirtschaftlich, direkt oder indirekt) mehr als 50 Prozent. des Stammkapitals der ersten besitzt;

(b) diese andere Person das Recht hat, mehr als 50 Prozent. der Stimmrechte der ersten auszuüben;

(c) diese andere Person ansonsten in der Lage ist, die Geschäfte zu leiten oder die Mehrheit der Mitglieder eines Vorstands, Verwaltungs- oder Aufsichtsrats des ersten zu bestellen oder abzuberufen; oder

(d) diese eine Tochtergesellschaft einer anderen Tochtergesellschaft ist

vorausgesetzt, dass für alle Zwecke dieses Darlehensvertrages PreAnalytiX GmbH (Switzerland) (und ihre Tochtergesellschaften) nicht als Tochtergesellschaft der Darlehensnehmerin oder als Tochtergesellschaft einer Tochtergesellschaft der Darlehensnehmerin gelten, wenn sie aufgrund bestimmter Beratungstätigkeiten, die die Darlehensnehmerin für dieses Joint Venture durchführt, nur als Tochtergesellschaft gemäß vorstehendem Absatz (c) gelten würden.

„**Wesentliche Tochtergesellschaft**“ ist jede Tochtergesellschaft der Darlehensnehmerin,

(i) deren Umsatz mindestens 5% des Konzernumsatzes oder deren Bilanzsumme mindestens 5% der Konzernbilanzsumme beträgt, jeweils berechnet auf der Grundlage des letzten geprüften Konzernabschlusses; oder

(ii) auf die alle oder im Wesentlichen alle Vermögensgegenstände und Verbindlichkeiten einer Wesentlichen Tochtergesellschaft übertragen worden sind.

“**TARGET2**” means the Trans-European Automated Realtime Gross Settlement Express Transfer System 2 which utilises a single shared platform and which was launched on 19 November 2007.

"**Subsidiary**" means an entity, company or other person of which another person has direct or indirect control.

One person is "controlled" by another, if:

(a) the other person owns (legally or beneficially, directly or indirectly) more than 50 per cent. of the equity share capital of the first;

(b) the other person has the right to exercise more than 50 per cent. of the voting rights of the first;

(c) the other person otherwise is able to direct the affairs or to appoint or dismiss the majority of the members of a managerial, administrative or supervisory board of the first; or

(d) is a Subsidiary of another Subsidiary,

provided that for all purposes of this Loan Agreement PreAnalytiX GmbH (Switzerland) (and its Subsidiaries) shall not qualify as a Subsidiary of the Company or any Subsidiary of the Company if it would only qualify as a Subsidiary under paragraph (c) above due to certain advisory work the Company performs for that joint venture.

“**Principal Subsidiary**” means any consolidated Subsidiary of the Borrower

(i) whose revenue is at least 5 per cent of the revenue of the Group or whose total assets amount to at least 5 per cent of the total assets of the Group, in each case calculated by reference to the latest audited accounts of the Group, or

(ii) to which all or substantially all the assets and liabilities of another Principal Subsidiary are transferred.

„**Wesentliche Nachteilige Änderung**“ bezeichnet jede wesentliche Verschlechterung in der finanziellen Lage der Darlehensnehmerin oder des Konzerns als Ganzes, die eine wesentlich nachteilige Auswirkung auf die Fähigkeit der Darlehensnehmerin, ihre Zahlungsverpflichtungen unter diesem Darlehensvertrag zu erfüllen, hat oder mit hinreichender Wahrscheinlichkeit hat.

“**Material Adverse Change**” shall mean any substantial deterioration of the financial situation of the Borrower or the Group taken as a whole, which has or is reasonably likely to have a material adverse effect on the ability of the Obligors to fulfil their payment obligations under this Loan Agreement.

„**US-GAAP“** bedeutet die Grundsätze ordnungsgemäßer Rechnungslegung in den Vereinigten Staaten von Amerika.

"**US-GAAP**" means generally accepted accounting principles in the United States of America.

„**Vorfälligkeitsentschädigung**“ bedeutet einen Schadensersatzanspruch, den die Darlehensgeberin gegenüber der Darlehensnehmerin im Fall einer vorzeitigen Tilgung geltend machen kann und die folgender Differenz entspricht: zwischen (a) den Zinsen (ohne die jeweils am Konditionenfestsetzungstermin des Darlehens festgelegte Marge bzw. Spread auf den Benchmark-Zins), die von der Darlehensnehmerin gemäß § 2 (*Zinsen*) für die Restlaufzeit des Darlehens oder den restlichen Teil der betreffenden Zinsperiode zu zahlen gewesen wären, und (b) dem Betrag, den die Darlehensgeberin hätte erzielen können, hätte sie einen dem von ihr gehaltenen Nennbetrag entsprechenden Betrag als Einlage bei einer führenden Bank auf dem Interbankenmarkt über einen Zeitraum platziert, welcher der Restlaufzeit bzw. dem noch nicht abgelaufenen Teil der Zinsperiode entspricht.

"**Prepayment Indemnity**" means an indemnity claim that the Lender may assert against the Borrower in the event of an early repayment and that equals the difference between (a) the interest (excluding the Margin or spread above the benchmark rate determined on pricing date hereof, as the case may be) that would otherwise be owed by the Borrower pursuant to section 2 (*Interest*) for the remaining term of the Loan or the remaining part of the relevant Interest Period and (b) the amount which that Lender would be able to obtain by placing an amount equal to the principal amount received by it on deposit with a leading bank in the Interbank Market for a period which is equal in length to the unexpired portion of the maturity period or the unexpired part of the Interest Period.

§ 2 Zinsen

§ 2 Interest

(1) Das Darlehen wird bezogen auf den Gesamtnennbetrag mit einem variablen Zinssatz verzinst. Der Zinssatz für die jeweilige Zinsperiode entspricht dem Referenzzinssatz zuzüglich 1,000 % (die „**Marge**“) per annum. Sollte der Referenzzinssatz negativ sein, so gilt ein Referenzzinssatz von null als vereinbart.

(1) The Loan shall bear interest on its aggregate principal amount at a floating interest rate. The interest rate for each Interest Period shall be the plus 1.000 per cent (the “**Margin**”) per annum. In case the Reference Interest Rate is less than zero, the Reference Interest Rate shall be deemed to be zero.

(2) Die Zinsen sind halbjährlich nachträglich am 13. Januar und 13. Juli eines jeden Jahres (jeweils ein „**Zinszahlungstag**“) zahlbar, erstmals am 13. Januar 2023, es sei denn, der betreffende Tag ist kein Bankarbeitstag. In diesem Fall ist die Zahlung am unmittelbar darauffolgenden Bankarbeitstag fällig, es sei denn, der Zinszahlungstag würde dadurch in den nächsten Kalendermonat fallen; in diesem Fall ist der Zinszahlungstag der unmittelbar vorhergehende Bankarbeitstag. Der Zeitraum zwischen dem Auszahlungstag (einschließlich) und dem ersten Zinszahlungstag (ausschließlich), sowie zwischen einem nachfolgenden Zinszahlungstag (einschließlich) und dem jeweils nächsten Zinszahlungstag (ausschließlich), wird „**Zinsperiode**“ genannt. Die erste Zinsperiode beginnt am 13. Juli 2022. Die Zinsen werden auf der Basis der genauen Zahl der in einer Zinsperiode abgelaufenen Tage, bezogen auf ein Jahr von 360 Tagen, berechnet. Die letzte Zinszahlung erfolgt am 13. Juli 2032.

(2) The interest shall be semiannually in arrears on 13 January and 13 July of each year (each an “**Interest Payment Date**”), for the first time on 13 January 2023, unless the relevant date is not a Banking Day. If any such Interest Payment Date is not a Banking Day, payment shall be due on the immediately following Banking Day unless the Interest Payment Date would then fall in the next calendar month. In this case, the Interest Payment Date shall be the immediately preceding Banking Day. The period from (and including) the Disbursement Date until (but excluding) the first Interest Payment Date as well as from (and including) any following Interest Payment Date until (but excluding) the relevant next Interest Payment Date is referred to as an "**Interest Period**”. The first Interest Period starts on 13 July 2022. Interest shall be calculated on the basis of the actual number of days elapsed during an Interest Period and a 360-day year. The last interest payment shall be made on 13 July 2032.

(3) Die Marge wird im Hinblick auf das von der Darlehensnehmerin zuletzt mitgeteilte und im jüngsten, vom ESG-Ratinganbieter veröffentlichten ESG-Bericht zugewiesene ESG-Rating gemäß der nachstehenden Tabelle angepasst (zur Vermeidung von Zweifeln: es erfolgt keine kumulative Erhöhung oder Verringerung der anwendbaren Marge gemäß der nachstehenden Tabelle für aufeinanderfolgende Zeiträume) (jede solche Anpassung eine "**ESG-Anpassung**").

(3) The Margin shall be adjusted with respect to the ESG Rating as most recently notified by the Borrower and determined by reference to the latest ESG Report published by the ESG Rating Provider and the table below (for the avoidance of any doubt, any such increase or decrease of the applicable Margin pursuant to the table below shall not be cumulative for successive periods) (each such adjustment an “**ESG Adjustment**”):

ESG Rating	ESG Rating
Erhöhung / Verringerung der Marge in Basispunkten pro Jahr	Increase / reduction of the Margin in basis points per annum
ESG-Rating im unteren ESG-Rating-Bereich	ESG Rating in the Lower ESG Rating Range
+ 2,5	+ 2.5
Basis-ESG-Rating	Base ESG Rating
0.00	0.00
ESG-Rating im oberen ESG-Rating-Bereich	ESG Rating in the Upper ESG Rating Range
- 2,5	- 2.5

Jegliche ESG-Anpassung wird mit dem ersten Tag der unmittelbar auf die Lieferung des jeweiligen ESG-Zertifikats folgenden Zinsperiode wirksam.

Any ESG Adjustment shall take effect on the first day of next Interest Period commencing immediately following delivery of the relevant ESG Certificate.

(4) Falls:

(a) der ESG-Ratinganbieter aus irgendeinem Grund der Darlehensnehmerin kein ESG-Rating mehr zuweist oder wenn der ESG-Ratinganbieter kein ESG-Rating für ein Geschäftsjahr zuweist (vorausgesetzt, dass jedes ESG-Rating spätestens am 31. Oktober eines jeden Jahres verfügbar gemacht wird); oder

(b) der ESG-Ratinganbieter hat (nach vernünftiger Einschätzung der Darlehensnehmerin) (1) die Bewertungsmethodik oder (2) den

hat die Darlehensnehmerin dem Darlehensgeber entsprechend zu benachrichtigen und dann eine alternative Partei, unabhängig von der Darlehensnehmerin, muss angewiesen werden, ein alternatives ESG-Rating zu berechnen und zuzuweisen, das für die Zwecke der Anpassung der Marge auf der Grundlage eines ESG-Ratings verwendet wird.

(4) If:

(a) the ESG Rating Provider, for any reason, no longer assigns an ESG Rating with respect to the Borrower or if the ESG Rating Provider fails to assign an ESG Rating for any business year (provided that each ESG Rating is made available no later than 31 October of each year); or

(b) the ESG Rating Provider has (in the reasonable opinion of the Borrower) amended (1) the valuation methodology or (2) the general approach of the valuation of

the Borrower shall notify the Lender accordingly and then an alternative party, independent of the Borrower, has to be instructed to calculate and award an equivalent ESG Rating to be used for the purposes of the adjustment of the Margin based on an ESG Rating.

(5) Ist der Referenzzinssatz nach Absatz (c) der Definition Referenzzinssatz zu bestimmen, so ist dieser ab Beginn der Zinsperiode, die unmittelbar nach dieser Festlegung beginnt, zu verwenden.

(5) If the Reference Interest Rate is to be calculated in accordance with paragraph (c) of the definition of the Reference Interest Rate such Interest Rate shall apply from the beginning of the Interest Period immediately following the determination.

(6) Sollte der Referenzzinssatz nach Absatz (c) der Definition Referenzzinssatz zu bestimmen sein, so ist jede Partei auf Aufforderung der anderen Partei verpflichtet, unverzüglich in Verhandlungen mit dem Ziel einzutreten, diejenigen Vertragsänderungen zu vereinbaren, die erforderlich sind, um:

(a) einen Ersatz für den dann maßgeblichen Referenzzinssatz zu vereinbaren, der dem ursprünglichen Referenzzinssatz möglichst nahekommt und die Darlehensgeberin und die Darlehensnehmerin nicht benachteiligt; und/oder

(b) vertragliche Regelungen mit der Nutzung des Referenzzinssatzes nach Absatz (c) der Definition Referenzzinssatz oder des zu vereinbarenden neuen Referenzzinssatzes zu harmonisieren, die Höhe des Zinssatzes unter Zugrundelegung dieses Zinssatzes zu berechnen, Marktusancen, welche sich in Bezug

und eine solche Vereinbarung im hierfür erforderlichen Umfang abzuschließen. Solange eine solche Vereinbarung nicht getroffen wurde:

(c) ist der von einer Partei festgelegte Referenzzinssatz oder, falls keine Partei eine Festlegung trifft, der zuletzt für eine Darlehensgewährung in EUR für eine vergleichbare Zinsperiode festgestellte Referenzzinssatz der maßgebliche Referenzzinssatz; und/oder

(d) muss die Partei, welche den Referenzzinssatz festlegt, durch Mitteilung an die andere Partei einseitig bindend diejenigen Änderungen des Darlehensvertrags festlegen, die geboten sind, damit der danach maßgebliche Zinssatz verwendet werden kann.

(7) An jedem Zinsfestsetzungstag wird die Zahlstelle die am Zinszahlungstag nach der betreffenden Zinsperiode fälligen Zinsen berechnen und der Darlehensnehmerin sowie der Darlehensgeberin mitteilen.

(6) If the Interest Rate is to be calculated in accordance with paragraph (c) of the definition of the Reference Interest Rate, each party will promptly (*unverzüglich*) at the request of the other party enter into negotiations with a view to agreeing those amendments to the Agreement which are necessary:

(a) to replace the applicable Reference Interest Rate at that time by a new reference interest rate which meets as closely as possible the initial Reference Interest Rate and which does not disadvantage the Borrower or the Lender; and/or

(b) to align any of its provisions in relation to the use of the Reference Interest Rate in accordance with paragraph (c) of the definition of the Reference Interest Rate or the new reference interest rate to be agreed, to enable that interest reference rate to be used for the calculation of the Interest Rate, to implement market conventions applicable to that interest reference rate, to provide for appropriate

and in each case to agree on such necessary amendments. For so long as such agreement has not been achieved:

(a) the Reference Interest Rate determined by one of the parties or, if no party has determined such Reference Interest Rate, the most recent Reference Interest Rate determined for the granting of a loan in EUR with a comparable interest period is the relevant Reference Interest Rate; and/or

(b) the party, which determines the Reference Interest Rate will, by notice to the other party, unilaterally specify those amendments to the Agreement which are necessary to apply the so determined Reference Interest Rate.

(7) On each Interest Rate Determination Date, the Paying Agent shall determine and notify the Borrower and the Lender of the interest payable on the Interest Payment Date following the relevant Interest Period.

(8) Für die Zwecke dieses Darlehensvertrages haben die folgenden Begriffe, die folgende Bedeutung:

„**Referenzzinssatz**" bezeichnet:

(a) den durch die jeweils zuständige Organisation (der „**Administrator**"), derzeit das European Money Markets Institute (EMMI), administrierten Referenzzinssatz „*euro interbank offered rate*" für die Dauer von 6 Monaten, welcher um 11:00 Uhr (Brüsseler Zeit) am zweiten (2.) Bankarbeitstag vor dem Beginn der jeweiligen Zinsperiode auf der Thomson Reuters Seite EURIBOR01 (oder auf einer anderen Thomson Reuters Seite, welche diesen Referenzzinssatz darstellt) oder auf der einschlägigen Seite eines anderen Informationsdienstes, der diesen Referenzzinssatz anstelle von Thomson Reuters veröffentlicht, dargestellt wird (der „**EURIBOR-Referenzzinssatz**");

(8) For purposes of this Loan Agreement the terms below have the following meaning:

"**Reference Interest Rate**" means:

(a) the euro interbank offered rate administered by the relevant organisation (the "**Administrator**"), currently the European Money Markets Institute (EMMI), equal in length to the relevant Interest Period, displayed at 11:00 a.m. (Brussels time) two Business Days before the first day of the following Interest Period on page EURIBOR01 of the Thomson Reuters screen (or any replacement Thomson Reuters page which displays that rate) or on the appropriate page of such other information service which publishes that rate from time to time in place of Thomson Reuters (the "**EURIBOR Reference Interest Rate**");

(b) wenn der EURIBOR-Referenzzinssatz vorübergehend nicht auf der Thomson Reuters Bildschirmseite EURIBOR01 (oder auf einer anderen Thomson Reuters Seite, welche diesen Referenzzinssatz darstellt) oder auf der einschlägigen Seite eines anderen Informationsdienstes, der diesen Referenzzinssatz anstelle von Thomson Reuters veröffentlicht, dargestellt wird, das arithmetische Mittel (falls erforderlich auf die dritte Dezimalstelle kaufmännisch gerundet) der Zinssätze per annum, die der Zahlstelle auf ihre Anforderung hin von drei von ihr ausgewählten Banken (die „**Referenzbanken**") als die Sätze genannt werden, welche nach deren Einschätzung eine führende Bank einer anderen führenden Bank um oder gegen 11:00 Uhr (Brüsseler Zeit) am zweiten (2.) Bankarbeitstag vor dem Beginn der jeweiligen Zinsperiode für Einlagen in EUR im europäischen Interbankenmarkt für die Dauer der betreffenden Zinsperiode quotiert. Sollte eine Referenzbank eine solche Quotierung nicht bis 13:00 Uhr (Brüsseler Zeit) am zweiten (2.) Bankarbeitstag vor dem Beginn der jeweiligen Zinsperiode abgeben, ist das betreffende arithmetische Mittel auf der Grundlage der von den übrigen Referenzbanken abgegebenen Quotierungen von der Zahlstelle zu bestimmen. Sofern keine oder nur eine der ausgewählten Banken eine Quotierung abgibt, wird der betreffende Referenzzinssatz durch die Zahlstelle (handelnd auf Weisung der Darlehensnehmerin, die ihre Entscheidung nach billigem Ermessen trifft) festgelegt; oder

(b) if the EURIBOR Reference Interest Rate is temporarily not available on the page EURIBOR01 of the Thomson Reuters screen (or any replacement Thomson Reuters page which displays that rate) or on the appropriate page of such other information service which publishes that rate from time to time in place of Thomson Reuters, the arithmetic mean of the rates p.a. (if required, rounded upwards to four decimal places) as supplied to the Paying Agent at its request by three banks appointed by the Paying Agent (the "**Reference Banks**") as the rate at which the relevant Reference Bank believes one prime bank is quoting to another prime bank at or about 11:00 a.m. (Brussels time) two Business Days before the first day of the following Interest Period for interbank term deposits in euro within the European interbank market for the relevant Interest Period. If at or about 1 p.m. (Brussels time) two Business Days before the first day of the following Interest Period, a Reference Bank does not supply a quotation, the arithmetic mean of the rates shall be calculated on the basis of the quotations of the remaining Reference Banks. If no or only one of the selected banks submits a quote, the respective reference interest rate shall be determined by the Paying Agent (acting on the instructions of the Borrower, who will make this determination in its reasonable discretion); or

(c) (wenn ein solcher Zinssatz nicht nur vorübergehend nicht mehr nach Absatz 0 oben festgestellt wird oder verwendet werden darf):

(i) den (nach deutschem Recht, einschließlich des Rechts der Europäischen Union, zulässigen) Zinssatz, den die Darlehensnehmerin, die ihr Ermessen nach Konsultation eines externen sachverständigen Dritten und unter Berücksichtigung von Marktusancen (soweit sich solche bereits etabliert haben) ausübt, nach

(c) (if any reference interest rate determined pursuant to paragraph (a) above is permanently no longer available or its use is prohibited):

(i) a replacement reference interest rate (permitted under German law, including the law of the European Union) shall be determined by the Borrower in its reasonable discretion (after consultation with a third party expert and taking into account market practice (if already established)) and notified to the Lender;

(ii) (wenn der die Darlehensnehmerin diesen Zinssatz nicht spätestens bis zum Ablauf einer Frist von 30 Bankarbeitstagen nach Versand einer Aufforderung hierzu durch die Darlehensgeberin über die Zahlstelle gemäß Absatz (i) oben festlegt) den Zinssatz, den die Darlehensgeberin in entsprechender Anwendung der in Absatz (i) oben enthaltenen Regelung festlegt; oder

(ii) (if the Borrower has not determined such replacement reference interest rate within 30 Business Days upon receipt of the Lender's request through the Paying Agent in accordance with paragraph (i) above, the Lender will determine the replacement reference interest rate in accordance with the requirements set out in paragraph (i) above mutatis mutandis; or

(iii) (wenn keine Partei den Ersatzreferenzzinssatz nach Absätzen (i) und (ii) oben festlegt) bis zu einer Festlegung des Ersatzreferenzzinssatzes nach Maßgabe dieses Darlehensvertrags den zuletzt für eine Darlehensgewährung in EUR für eine vergleichbare Zinsperiode nach Absatz (a) oben festgestellten Zinssatz.

(iii) (if no party determines such replacement reference interest rate in accordance with paragraphs (i) and (ii) above), and for so long as no such replacement reference interest rate has been determined, the most recent Reference Interest Rate determined for the granting of a loan in EUR with a comparable interest period shall be the replacement reference interest rate determined in accordance with paragraph (a) above.

„**Zinsfestsetzungstag**“ den zweiten Bankarbeitstag vor Beginn der betreffenden Zinsperiode.

“**Interest Rate Determination Date**” means the second Banking Day prior to the start of the relevant Interest Period.

§ 3 Rückzahlung/Vorzeitige Rückzahlung

§ 3 Repayment/Early Redemption

(1) Das Darlehen ist am 13. Juli 2032 zum Gesamtnennbetrag vollständig zurückzuzahlen, jedoch mit der Maßgabe, dass, sofern dieser Tag kein Bankarbeitstag ist, die Zahlung am darauffolgenden Bankarbeitstag in dem jeweiligen Kalendermonat (falls es einen gibt) oder (falls es keinen gibt) am unmittelbar vorausgehenden Bankarbeitstag fällig ist (der „**Rückzahlungstag**“).

(1) The aggregate principal amount of the Loan shall be repaid in full on 13 July 2032, provided, however, that if such day is not a Banking Day, payment shall be due on the following Banking in that calendar month (if there is one) and (if there is none) the immediately preceding Banking Day (the “**Repayment Date**”).

(2) Der Darlehensnehmer ist berechtigt, den Vertrag nach Maßgabe der einschlägigen zwingenden gesetzlichen Bestimmungen vor dem Rückzahlungstag zu kündigen und das Darlehen zurückzuzahlen.

(2) The Borrower is entitled to terminate and repay the Loan prior to the Maturity Date in accordance with applicable mandatory law.

(3) Sofern ein Kontrollwechsel eingetreten ist, ist die Darlehensgeberin berechtigt, das Darlehen unter Einhaltung einer Kündigungsfrist von mindestens dreißig (30) Tagen durch schriftliche Mitteilung an die Darlehensnehmerin (und Kopie an die Zahlstelle) das Darlehen in Höhe ihres jeweiligen Anteils am Gesamtnennbetrag (jeweils zuzüglich bis zum vorzeitigen Rückzahlungstag aufgelaufener Zinsen) zu kündigen. Die Kündigung ist unwiderruflich und muss den

(3) In the event a Change of Control has occurred, each Lender shall be entitled to terminate the respective aggregate amount in the Loan attributable to that Lender in writing to the Borrower (copy to the Paying Agent) together with interest accrued to the date fixed for prepayment on giving not less than thirty (30) days' notice. Such notice will be irrevocable and must specify the date fixed for prepayment.

§ 4 Zahlungen, Zahlstelle

§ 4 Payments, Paying Agent

(1) Die Darlehensnehmerin ist verpflichtet, bei Fälligkeit alle Kapital- oder Zinszahlungen, die gemäß diesem Darlehensvertrag geschuldet werden, in Euro auf das Konto der Zahlstelle zu zahlen.

(1) The Borrower undertakes to pay, as and when due, any sum of principal or interest owed under the Loan Agreement in Euro to the account of the Paying Agent.

(2) Sofern eine Kapitalzahlung bei Fälligkeit nicht erbracht wird, wird der betreffende Betrag ab dem Fälligkeitstag (einschließlich) bis zum Datum der tatsächlichen Zahlung des überfälligen Betrages (ausschließlich) zu einem Zinssatz von 1 % per annum über dem an dem jeweiligen Fälligkeitstermin für das Darlehen geltenden Zinssatz verzinst, unbeschadet des Rechts der Darlehens geberin, weitergehende Schadensersatz ansprüche geltend zu machen, und unbeschadet des Rechts der Darlehens nehmerin, das Vorliegen eines geringeren Verzugsschadens nachzuweisen.

(2) If any sum of principal is not paid when due the respective sum shall bear interest from (and including) the due date to (but excluding) the date of actual payment of the sum overdue at a rate of 1 per cent per annum above the rate of interest applicable to the Loan on the respective due date without prejudice to the right of the Lender to claim any further damages and without prejudice to the right of the Borrower to present evidence that the loss due to the late payment was less.

(3) Sofern eine Zinszahlung bei Fälligkeit nicht erbracht wird, hat die Darlehensgeberin das Recht auf den Ersatz des durch den Verzug entstandenen Schadens.

(3) If an interest payment is not made when due, the Lender has the right to demand indemnification for the loss caused by the delay in payment.

(4) Zahlungen der Darlehensnehmerin werden in der in § 367 Abs. 1 BGB vorgesehenen Reihenfolge auf die fälligen Beträge angerechnet.

(4) Payments by the Borrower shall be applied in the sequence provided for in section 367 para. 1 of the German Civil Code (*BGB*) to the amounts falling due.

(5) Vorbehaltlich der Regelungen in § 9 (1) tritt die Erfüllungswirkung gegenüber der Darlehensgeberin erst ein, wenn die betreffenden Zahlungen ihr zugegangen oder auf einem von ihr benannten Konto gutgeschrieben sind.

(5) Subject to the rules in § 9 para. 1, fulfilment in relation to the Lender shall only occur once it receives the relevant payments or these are credited to an account it has designated.

(6) Mit einer gesonderten Vereinbarung hat die Darlehensnehmerin die Bayerische Landesbank beauftragt, die Funktionen einer Zahlstelle (die Bayerische Landesbank wird hinsichtlich dieser Aufgaben als „**Zahlstelle**“ bezeichnet) zu übernehmen. Die Zahlstelle wird diese Funktionen nach Maßgabe der Zahl stellenvereinbarung vom 4. Juli 2022 ausüben. Die Darlehensnehmerin ist berechtigt, jederzeit ein anderes Kreditinstitut in der Bundesrepublik Deutschland oder der Europäischen Union mit der Wahrnehmung der Funktion der Zahlstelle zu beauftragen, sofern sie dies der Darlehensgeberin (über die Zahlstelle) schriftlich anzeigt. Wenn in diesem Darlehensvertrag auf die „Zahlstelle“ verwiesen wird, gilt jedes weitere als Zahlstelle eingesetzte Kreditinstitut als in diesen Verweis eingeschlossen.

(6) By a separate agreement, the Borrower has mandated Bayerische Landesbank to exercise the role of paying agent (Bayerische Landesbank shall hereinafter be referred to as “**Paying Agent**" with respect to the duties in connection with this role). The Paying Agent shall exercise this role in accordance with the paying agency agreement dated as of 4 July 2022. The Borrower may at any time mandate another Credit Institution in the Federal Republic of Germany or the European Union to exercise the role of Paying Agent provided the Borrower informs the Lender (through the Paying Agent) in writing. Any reference in this Loan Agreement to the “Paying Agent” shall include any further Credit Institutions that exercise the role of Paying Agent.

(7) Die Zahlstelle handelt ausschließlich als Beauftragte der Darlehensnehmerin und übernimmt keine Verpflichtungen gegenüber der Darlehensgeberin und es wird kein Auftrags- oder Treuhandverhältnis zwischen ihr und der jeweiligen Darlehensgeberin begründet.

(7) The Paying Agent acts solely as agent of the Borrower and does not have any obligations towards or relationship of agency or trust to any Lender.

§ 5 Steuern

§ 5 Taxes

(1) Alle gemäß diesem Darlehensvertrag von der Darlehensnehmerin zu leistenden Kapital- und Zinszahlungen sind ohne Einbehalt oder Abzug von oder aufgrund von Steuern oder ähnlichen Abgaben jeglicher Art zu leisten, die derzeit oder künftig im oder für den Sitzstaat der Darlehensnehmerin oder von eine dortigen Behörde auferlegt oder erhoben werden (die „**Quellensteuern**“), es sei denn, diese sind gesetzlich vorgeschrieben. Sofern die Darlehensnehmerin gesetzlich verpflichtet ist, derartige Einbehaltungen oder Abzüge - abgesehen von FATCA - vorzunehmen, wird sie diejenigen zusätzlichen Beträge zahlen (die „**Zusätzlichen Beträge**“), die erforderlich sind, damit die Darlehensgeberin netto die gleichen Beträge erhält, die sie ohne eine solche Einbehaltung oder einen solchen Abzug als Kapital- und Zinszahlungen aus dem Darlehensvertrag erhalten hätte.

(1) All payments of principal and interest under the Loan Agreement by the Borrower shall be made without deduction or withholding for, or on account of, any present or future taxes or similar duties of whatever nature imposed or levied by or on behalf of the country where the Borrower has its legal seat or any governmental authority there (“**Withholding Taxes**”) unless such deduction or withholding is required by law. If the Borrower is required by law to make such withholding or deduction other than FATCA, then the Borrower shall pay such additional amounts (the “**Additional Amounts**”) as may be necessary in order that the net amounts received by the Lender after such deduction or withholding shall equal the respective amounts of principal and interest which would have been receivable under the Loan Agreement in the absence of such deduction or withholding.

(2) Falls der Darlehensgeberin Umstände bekannt werden, die dazu führen, dass die Darlehensnehmerin gemäß § 5 (1) des Darlehensvertrags Zusätzliche Beträge schuldet, informiert die Darlehensgeberin die Darlehensnehmerin hierüber unverzüglich, ohne dass dadurch die in § 5 (1) beschriebenen Verpflichtungen der Darlehensnehmerin in irgendeiner Weise eingeschränkt würden. Die Darlehensgeberin wird dann in Absprache mit der Darlehensnehmerin solche ihr zumutbaren Schritte unternehmen, um die Wirkungen der genannten Umstände zu vermeiden oder zu vermindern, wobei (i) sie nicht verpflichtet ist, Schritte zu unternehmen, die nach ihrer vernünftigen Einschätzung für sie nachteilig sein könnten und (ii) ihr etwaige Kosten für gemäß § 5 (2) dieses Darlehensvertrages unternommene Schritte von der Darlehensnehmerin zu erstatten sind.

(3) Falls (i) in der Folge einer am oder nach dem Datum dieses Darlehensvertrages wirksam werdenden Änderung der im Sitzstaat der Darlehensnehmerin geltenden Rechtsvorschriften Quellensteuern auf die

(2) If a Lender becomes aware of circumstances resulting in Additional Amounts to be owed by the Borrower pursuant to § 5 para. 1 of this Loan Agreement, such Lender – without prejudice to the Borrower's obligations pursuant to § 5 para. 1 of this Loan Agreement – shall inform the Borrower about the aforementioned circumstances without undue delay. The relevant Lender shall, in cooperation with the Borrower, take all reasonable steps to mitigate or avoid the consequences of the aforementioned circumstances whereas (i) the relevant Lender shall not be obliged to take any steps which such Lender determines in its reasonable discretion to be detrimental and (ii) the Borrower shall reimburse any costs incurred by such Lender due to any steps taken to § 5 para. 2 of this Loan Agreement.

(3) If (i) as a consequence of any amendments of the legal regulations valid in the country where the Borrower has its legal seat that take effect on the date of this Loan Agreement or thereafter, Withholding Taxes

(4) Soweit die Darlehensnehmerin zum Einbehalt und zur Abführung nach FATCA verpflichtet ist, ist sie berechtigt, diesbezüglich anfallende Beträge von der Bruttovergütung zu Lasten der Darlehensgeberin einzubehalten und an die zuständige Behörde abzuführen, ohne hierfür einen Ausgleich an die von einem solchen Einbehalt oder Abzug betroffene Darlehensgeberin zahlen zu müssen.
Für Zwecke dieses Absatzes bedeutet „**FATCA**“ (i) Paragraphen 1471 bis 1474 des Revenue Code oder damit im Zusammenhang stehende Vorschriften; (ii) (b) jedes Abkommen, jedes Gesetz oder jede Vorschrift einer anderen Rechtsordnung beziehungsweise im Zusammenhang mit einem zwischenstaatlichen Abkommen zwischen den USA und einer anderen Rechtsordnung, die (jeweils) die Umsetzung der Gesetze oder Vorschriften im Sinne des vorstehenden Absatzes (i) erleichtert; und (iii) jede infolge der Umsetzung eines Abkommens, Gesetzes oder einer Vorschrift im Sinne der vorstehenden Absätze (i) und (ii) mit der US-Bundesfinanzbehörde „US Internal Revenue Service“, der US-Regierung oder einer staatlichen Stelle oder Finanzbehörde in einer anderen Rechtsordnung geschlossene Vereinbarung.

§ 6 Erhöhte Kosten

Falls aufgrund einer nach dem Datum dieses Darlehensvertrages erfolgenden Einführung eines Gesetzes oder einer sonstigen Vorschrift bzw. einer Änderung der Anwendung oder Auslegung eines Gesetzes oder einer sonstigen Vorschrift durch eine zuständige Behörde oder des

§ 7 Negativklausel, Rang (*pari passu*), Verfügungen

(4) If the Borrower is required by FATCA to deduct and withhold any amounts, the Borrower shall be entitled to deduct such amounts due from the gross remuneration at the expense of the Lender and shall pay such amounts to the competent taxing authority without being required to pay any compensation to the Lender affected by such deduction or withholding.
For purposes of this section, “**FATCA**” means (i) sections 1471 to 1474 of the Revenue Code or any related regulationsany treaty, law, regulation or other official guidance enacted in any other jurisdiction, or relating to an intergovernmental agreement between the United States and any other jurisdiction, which (in either case) facilitates the implementation of the preceding sections (i) and (ii); or (iv) any agreement for the purposes of the implementation of the preceding sections (i) to (iii) with the US Internal Revenue Service, the United States government or any governmental or taxation authority in any other jurisdiction.

§ 6 Increased Costs

If – after the date hereof – by reason of introduction or change of the interpretation or application by the respective competent authority with respect to any law or regulation or compliance with any law or regulation (except for such laws and regulations which have been in force as of the date of this Loan Agreement and with which the respective

§ 7 Negative Pledge, Status (*pari passu*), Disposals

(1) Die Darlehensnehmerin verpflichtet sich für die Laufzeit dieses Darlehensvertrages bzw. wird bei ihren Wesentlichen Tochtergesellschaften für die Laufzeit dieses Darlehensvertrages dafür Sorge tragen, dass weder sie noch eine ihrer Wesentlichen Tochtergesellschaften Grund- und Mobiliarpfandrechte oder andere dingliche Sicherungsrechte (die "**Sicher heiten**") an ihren jeweiligen Vermögens gegenständen bestellt oder bestehen lässt, um Finanzverbindlichkeiten zu besichern, es sei denn, die Verbindlichkeiten der Darlehensnehmerin aus diesem Darlehensvertrag werden zur gleichen Zeit in gleicher Weise und gleichem Rang und anteilig besichert. Dies gilt nicht für Sicherheiten, die aufgrund zwingender gesetzlicher Vorschriften bestellt wurden oder zu bestellen sind.

Dies gilt nicht für Sicherheiten in folgenden Fällen:

(i) Sicherheiten im Rahmen von Cash-Pooling-Vereinbarungen, die im normalen Geschäftsgang abgeschlossen werden;

(ii) Ver- oder Aufrechnungsvereinbarungen, die von einem Mitglied des Konzerns im Rahmen der üblichen

(iii) Sicherheiten, die im Rahmen des ordentlichen Geschäftsgangs durch gesetzliche Bestimmungen oder übliche Geschäftsbedingungen begründet werden;

(iv) Sicherheiten im Zusammenhang mit Vermögenswerten, die ein Konzernmitglied nach dem Datum des Darlehensvertrags erworben hat, oder mit Vermögenswerten von oder Anteilen an Personen, die ein Mitglied des Konzerns nach dem Datum des Darlehensvertrags erworben hat, falls:

(A) die Sicherheit nicht im Hinblick auf den Kauf dieses Vermögenswertes durch ein Mitglied des Konzerns begründet wurde und

(B) der besicherte Kapitalbetrag nicht im Hinblick auf oder seit dem Kauf dieses Vermögenswertes durch ein Mitglied des Konzerns erhöht wurde;

(1) For the term of this Loan Agreement, the Borrower will not, and will ensure that none of its Principal Subsidiaries will, create or permit to subsist any mortgage, lien, charge, pledge or other *in rem* security interest (the "**Security**") upon any of their respective assets, to secure any Financial Indebtedness unless, at the same time or prior thereto, the Borrower's obligations under the Loan Agreement are equally and rateably secured, except for any Security created or to be created pursuant to mandatory law.

This does not apply to any Security listed below:

(i) any Security arising under cash-pooling agreements entered into in the ordinary course of business;

(ii) any netting or set-off arrangement entered into by any member of the Group in the ordinary course of its banking arrangements for the

(iii) any Security arising in the ordinary course of business by operation of law or on the basis of customary general business conditions;

(iv) any Security over or affecting any asset acquired by or any asset of or shares in any person acquired by a member of the Group after the date of this Loan Agreement if:

(A) the Security was not created in contemplation of the acquisition of that asset by a member of the Group; and

(B) the principal amount secured has not been increased in contemplation of or since the acquisition of that asset by a member of the Group;

(v) Sicherheiten unter Rahmenverträgen für Finanztermingeschäfte (jeweils einschließlich unter einen Credit Support Annex), die im normalen Geschäftsgang eines Mitgliedes des Konzerns abgeschlossen werden;

(v) any Security arising under framework master agreements on derivatives (including in each case without limitation any related credit support annexes) entered into in the ordinary course of business by any member of the Group;

(vi) Barsicherheiten, die als Tilgung einer unter dem jeweils aktuellen Konsortialkreditvertrag der Darlehensnehmerin eingerichteten Abzweigline (*Ancillary Facility*) gewährt wurden;

(vi) any cash cover granted as repayment of an ancillary facility under the relevant existing syndicated loan agreement (Ancillary Facility);

(vii) Barsicherheiten, die im Rahmen eines öffentlichen Übernahmeangebots für Aktien (oder andere aktiengebundene Wertpapiere) ausschließlich zum Zweck der Besicherung der Zahlungsverpflichtung (oder einer Bankgarantie für diese Zahlungsverpflichtung) gestellt wurden in Fällen, in denen der Markt ein solches Verfahren in seinen jeweiligen Übernahmegesetzen fordert;

(vii) any cash cover created solely for the purpose of securing the payment obligation (or the bank guarantee for such payment obligation) under a public tender offer for shares (and other equity linked securities), in a market which requires such process in its respective take-over code; and

(viii) Sicherheiten im Zusammenhang mit jeglicher Vereinbarung, bei der ein Mitglied des Konzerns jegliche marktgängige Wertpapiere zu Bedingungen verkauft, die einen Rückkauf durch das Mitglied des Konzerns innerhalb eines Zeitraums von bis zu sechs (6) Monaten ab Verkaufsdatum vorsehen bzw. ermöglichen (eine „**Rückkauf vereinbarung**"), vorausgesetzt

(viii) any Security created in connection with any arrangement by which a member of the Group disposes of any marketable securities on terms whereby they are or may be re-acquired by such member of the Group (a "**Repurchase Arrangement**") within a period not exceeding six (6) months from the date of the disposal, provided that:

(A) der Nennbetrag aller von der Rückkaufvereinbarung betroffenen Wertpapiere,

(A) the principal amount of all securities subject to Repurchase Arrangements;

(B) der ausstehende Nennbetrag aller in Vertrauen auf Ziffer (3)(a) unten verkauften Forderungen zu Asset-Backed-Securities-Transaktionen; und

(B) the outstanding principal amount of all receivables sold with respect to asset-backed securities transactions; and

(C) der Marktwert der Vermögenswerte aus Sale-and-lease-back-Transaktionen gemäß Ziffer(3)(d) unten

(C) the aggregate market value of assets subject to sale-and lease-back transactions described under paragraph 3 (d) below

liegt insgesamt jederzeit bei maximal 10 % der Konzernbilanzsumme des Konzerns (berechnet durch Bezugnahme auf den letzten geprüften Konzernabschluss des Konzerns), wobei jede gemäß dieser Ziffer zulässigerweise bestellte Sicherheit auch dann zulässig bleibt, auch wenn die Grenze von 10 % der Konzernbilanzsumme aufgrund einer nachträglichen Verringerung der Konzernbilanzsumme nicht mehr eingehalten ist;

shall, when aggregated, not exceed 10 per cent. of consolidated total assets of the Group (as calculated by reference to the most recent audited consolidated financial statements of the Group) provided that, for the avoidance of doubt, any permitted Security created in reliance of this paragraph (viii) remains to be permitted although the amount referred to in this paragraph (viii) is no longer complied with due to a subsequent decrease in the Company's consolidated total assets after the date of the Relevant Repurchase Agreement or disposal;

(ix) Sicherheiten zur Besicherung von Finanzverbindlichkeiten, die einem anderen Mitglied des Konzerns geschuldet werden um negative Steuereffekte für den Konzern oder ein Mitglied des Konzerns zu verhindern oder verringern;

(ix) any Security created to secure Financial Indebtedness owed to any other member of the Group with a view to avoid or mitigate any detrimental tax effect for the Group or any member of the Group;

(x) Sicherheiten, die zur Erfüllung von § 8a Altersteilzeitgesetz oder § 7b oder 7e Sozialgesetzbuch IV bestehen oder begründet wurden;

(x) any Security existing or created in order to comply with Article 8a of the German Partial Retirement Act (*Altersteilzeitgesetz*) or Article 7b or 7e of the German Social Security Code IV (*Sozialgesetzbuch IV*);

(xi) Sicherheiten unter im gewöhnlichen Geschäftsverkehr begründeten (verlängerten) Eigentumsvorbehalten, Ratenkaufverträgen, Kaufverträgen unter Eigentumsvorbehalt (*conditional sale agreement*) oder Vereinbarungen, die einen vergleichbaren Effekt im Hinblick auf an ein Mitglied des Konzern gelieferte Waren haben, und die aufgrund der Allgemeinen- oder Standardgeschäftsbedingungen des Lieferanten und nicht aufgrund eines Vertragsverstoßes eines Mitglieds des Konzerns entstehen;

(xi) any Security arising under any retention of title, hire purchase or conditional sale arrangement or arrangements having similar effect in respect of goods supplied to a member of the Group in the ordinary course of trading and on the supplier's standard or usual terms and not arising as a result of any default or omission by any member of the Group;

(xii) Sicherheiten an Vermögensgegenständen, die von einer Wertpapierverwahrstelle oder einem Clearing House aufgrund der allgemeinen Geschäftsbedingungen bzw. Geschäftsabläufe der betreffenden Wertpapierverwahrstelle bzw. Clearing House im Rahmen des gewöhnlichen Geschäftsbetriebs entstehen oder bestellt werden; und

(xii) any Security created or subsisting over any asset held in any securities depositary or any clearing house pursuant to the standard terms and procedures of the relevant securities depositary or clearing house applicable in the normal course of trading;

(xiii) Sicherheiten zur Besicherung von Finanzverbindlichkeiten, deren Kapitalbetrag (zusammen mit den Kapitalbeträgen aller Finanzverbindlichkeiten, für die ein Mitglied des Konzerns im Vertrauen auf diese Ziffer (xiii) eine Sicherheit bestellt hat), zum Zeitpunkt der Bestellung der jeweiligen Sicherheit 10% der Konzernbilanzsumme (berechnet durch Bezugnahme auf den letzten geprüften Konzernabschluss des Konzerns) übersteigt, wobei jede gemäß dieser Ziffer zulässigerweise bestellte Sicherheit auch dann zulässig bleibt, auch wenn die Grenze von 10 % der Konzernbilanzsumme aufgrund einer nachträglichen Verringerung der Konzernbilanzsumme nicht mehr eingehalten ist.

(xiii) any Security securing indebtedness the principal amount of which (when aggregated with the principal amount of any other indebtedness which has the benefit of Security given by any member of the Group other than as permitted under paragraphs (i) to (x) above) does not, when aggregated, exceed 10 per cent. of consolidated total assets of the Group (as calculated by reference to the most recent audited consolidated financial statements of the Group) provided that, for the avoidance of doubt, any permitted Security created in reliance of this paragraph (xiii) remains to be permitted although the amount referred to in this paragraph (xiii) is no longer complied with due to a subsequent decrease in the Company's consolidated total assets.

(2) Die Darlehensnehmerin sichert zu, dass ihre Zahlungspflichten aus diesem Darlehensvertrag während der gesamten Laufzeit dieses Darlehensvertrages mit allen anderen gegenwärtigen und zukünftigen unbesicherten und nicht nachrangigen Zahlungsverpflichtungen der Darlehensnehmerin im gleichen Rang stehen (*pari passu*). Ausgenommen hiervon

(2) The Borrower shall ensure that for the term of this Loan Agreement, its payment obligations under this Loan Agreement will rank *pari passu* with all other present and future, unsecured and unsubordinated payment obligations of the Borrower. This shall not apply to payment obligations whose prior servicing results from mandatory, generally applicable laws or regulations or

(3) Die Darlehensnehmerin verpflichtet sich einzelne Gegenstände ihres Anlagevermögens nicht auf einen Dritten zu übertragen oder zu übereignen. Dies gilt nicht für Übertragungen und Übereignungen:

(3) The Borrower shall whether voluntary or involuntary, sell, lease, transfer or otherwise dispose of any asset. This does not apply to any sale, lease, transfer or other disposal:

(a) von Vermögensgegenständen im gewöhnlichen Geschäftsgang zu marktüblichen Konditionen,

(a) of assets made at arm’s length in the ordinary course of business;

(b) von Vermögensgegenständen eines Mitglieds des Konzerns zu Gunsten eines anderen Mitglieds des Konzerns,

(b) of any asset by a member of the Group to another member of the Group;

(c) von Forderungen im Rahmen von Asset-Backed Securities-Trans aktionen, soweit der ausstehende Kapitalbetrag der von der Darlehensnehmerin durchgeführten Transaktionen in keinem ihrer Geschäftsjahre insgesamt 15 Prozent der Konzernbilanzsumme (berechnet durch Bezugnahme auf den letzten geprüften Konzernabschluss des Konzerns) übersteigt, wobei jede gemäß dieser Ziffer zulässigerweise durchgeführte Verfügung auch dann zulässig bleibt, auch wenn die Grenze von 15 % der Konzernbilanzsumme aufgrund einer nachträglichen Verringerung der Konzernbilanzsumme nicht mehr eingehalten ist,

(c) of receivables under asset backed securities transactions, where the aggregated outstanding principal amount of the Borrower's transactions does not exceed 15 per cent. of consolidated total assets in any of the Borrower's financial years (calculated by reference to the most recent audited consolidated financial statements of the Group), provided that any disposition made pursuant to this clause shall remain permitted even if the limit of 15 per cent. of the Group's total assets is no longer complied with due to a subsequent reduction in the Group's total assets;

(d) von Forderungen im Rahmen von marktüblichen Sale-and-Lease-back-Transaktionen, soweit der aus stehende Kapitalbetrag der von der Darlehensnehmerin durchgeführten Transaktionen in keinem ihrer Geschäftsjahre insgesamt 15 Prozent der

(d) of receivables under sale and leaseback transactions under normal commercial terms where the aggregated outstanding principal amount of the Borrower's transactions does not exceed 15 per cent. of consolidated total assets in any of the Borrower's financial years (calculated by reference to the most recent audited consolidated financial

(e) von eigenen Aktien der Darlehensnehmerin, für die der Marktwert erhalten wurde oder im Kontext einer Aktienoption, eines Pensionsplans oder der Ausgabe von Belegschaftsaktien an Mitarbeiter und leitende Angestellte der Darlehensnehmerin oder einer ihrer Tochtergesellschaften,

(e) of treasury shares of the Borrower for which fair value is received or in the context of stock option, pension plan or incentives programs for employees and directors of the Borrower or any of its Subsidiaries;

(f) von Vermögensgegenständen im Austausch gegen gleichwertige oder höherwertige Vermögens,

(f) of assets in exchange for other assets which are comparable or superior as to type, value and quality

(g) überflüssigen Vermögensgegenständen oder Liquidationswerten

(g) of obsolete or surplus assets;

(h) von Geld und sonstigen Finanzmitteln, soweit dies nicht aufgrund anderer Regelung in diesem Darlehensvertrag verboten ist,

(h) of money or cash for purposes not otherwise prohibited by this Agreement;

(i) aufgrund gesetzlicher und/oder behördlicher Vorgaben oder Anordnungen,

(i) required by law or any governmental authority or agency;

(j) deren Erlös (abzüglich branchen üblicher Transaktionskosten) im Rahmen des Gesellschaftszwecks reinvestiert wird oder zur Rückzahlung von Finanzverbindlich keiten verwendet wird oder als Liquidität in dem Konzern verbleibt, und

(k) von Vermögenswerten, deren Buchwert (oder, im Falle einer Veräußerung von Anteilen an einem Mitglied des Konzerns, deren relativer Wert in Prozent der Konzernbilanz summe, wie im jeweils letzten geprüften konsolidierten Konzernabschluss der

(j) where the proceeds of such transfers or conveys (less customary transaction costs) are reinvested for the corporate purpose or used for repayment of Financial Indebtedness or remains within the Group as liquid funds; and

(k) of assets whose book value (or, in the case of a disposal of shares in a Group member, the value of the shares to be sold as a percentage of the consolidated group assets as shown in the Borrower's most recent consolidated financial accounts), when aggregated with the book value of all other assets disposed of (other than any of

§ 8 Außerordentliche Kündigung

(1) Die Darlehensgeberin ist berechtigt, ihre Darlehensforderung fristlos zu kündigen und die sofortige Rückzahlung der jeweiligen Darlehensforderung und der aufgelaufenen Zinsen zu verlangen, wenn

(a) die Darlehensnehmerin Zinsen oder Kapital nicht am jeweiligen Fälligkeitstag zahlt, es sei denn die Nichtzahlung beruht auf technischen oder sonstigen administrativen Gründen außerhalb der Kontrolle der Darlehensnehmerin und wird innerhalb von fünf (5) Bankarbeitstagen nachgeholt, oder

(b) die Darlehensnehmerin sonstige wesentliche Verpflichtungen aus diesem Darlehensvertrag (mit Ausnahme von § 2 (4), Absatz (c) der Definition „Referenzzinssatz“ und § 11 (3)) nicht erfüllt und diese Nichterfüllung, sofern behebbar, nicht innerhalb eines Zeitraums von fünfzehn (15) Bankarbeitstagen nach entsprechender Benachrichtigung der Darlehensnehmerin durch die Darlehensgeberin behoben wird, oder

(c) (i) Finanzverbindlichkeiten der Darlehensnehmerin und/oder einer ihrer Wesentlichen Tochtergesellschaften über

§ 8 Events of Default

(1) A Lender shall be entitled to declare its respective claim under the Loan by extraordinary termination and demand immediate repayment of the respective claim under the Loan together with interest accrued if

(a) the Borrower fails to pay interest or principal on the relevant due date unless such non-payment results from technical or other administrative reasons beyond the control of the Borrower and is not remedied within five (5) Banking Days; or

(b) the Borrower fails to perform any other material obligation under this Loan Agreement (other than § (2), paragraph (c) of the Definition “Reference Interest Rate” and § 11 (3)) and such failure is capable of being remedied and is not remedied within fifteen (15) Banking Days after notice thereof has been given by the Lender to the Borrower; or

(c) (i) Financial Indebtedness of the Borrower and/or of any of its Principal Subsidiaries, the aggregate amount of which exceeds

(d) die Darlehensnehmerin oder eine ihrer Wesentlichen Tochtergesellschaften zahlungsunfähig ist oder einräumt, zahlungsunfähig zu sein, ihre Zahlungen für Verbindlichkeiten einstellt oder aufgrund von tatsächlichen oder erwarteten finanziellen Schwierigkeiten Verhandlungen mit einem oder mehreren ihrer Gläubiger im Hinblick auf eine generelle Neuordnung oder Umschuldung ihrer Verbindlichkeiten beginnt oder eine Abtretung oder einen Vergleich zugunsten ihrer Gläubiger abschließt, oder

(d) the Borrower or any of its Principal Subsidiaries is unable or admits its inability to pay its debts as they fall due, suspends making payments on its debts or, by reason of actual or anticipated financial difficulties, commences negotiations with one or more of its creditors with a view to the general readjustment or rescheduling of its indebtedness or makes an assignment for the benefit of or a composition with its creditors; or

(e) ein zuständiges Gericht ein Insolvenzverfahren über das Vermögen der Darlehensnehmerin oder einer Wesentlichen Tochtergesellschaft eröffnet, ein solches Verfahren eingeleitet und nicht innerhalb von sechzig (60) Tagen aufgehoben oder ausgesetzt worden ist oder die Darlehensnehmerin oder die Wesentliche Tochtergesellschaft die Eröffnung eines solchen Verfahrens beantragt oder einleitet, oder

(e) a competent court opens insolvency proceedings against the Borrower's or a Principal Subsidiaries' assets, such proceedings are instituted but not discharged or stayed within sixty (60) days, or the Borrower or the Principal Subsidiary applies for or institutes such proceedings; or

(f) die Darlehensnehmerin oder eine Wesentliche Tochtergesellschaft in Liquidation tritt, es sei denn, es handelt sich um eine freiwillige Liquidation, oder

(f) the Borrower or a Principal Subsidiary goes into liquidation other than a voluntary liquidation; or

(g) Zwangsvollstreckungsmaßnahmen in das Vermögen der Darlehensnehmerin oder einer Wesentlichen Tochtergesellschaft, sofern der Wert der Forderungen, wegen der die Zwangsvollstreckung betrieben wird, insgesamt mindestens USD 5.000.000,- (oder entsprechendem Gegenwert in einer anderen Währung) beträgt und diese nicht binnen zwanzig (20) Bankarbeitstagen aufgehoben oder in Treu und Glauben angefochten werden;

(g) Enforcement measures are initiated against the Borrower or any other member of the Group, provided that such measures are in respect of indebtedness aggregating more than USD 5.000.000,- (or the equivalent in another currency) and are not discharged within 20 Business Days; or

(h) die Darlehensnehmerin oder eine ihrer Wesentlichen Tochtergesellschaften ihre Geschäftstätigkeit ganz oder im Wesentlichen einstellt, sofern diese nicht auf eine andere Tochtergesellschaft der Darlehensnehmerin übertragen wird, oder

(h) the Borrower or any Principal Subsidiary ceases its business operations in whole or in material parts thereof unless such business is transferred to another Subsidiary of the Borrower; or

(i) eine Verschmelzung der Darlehensnehmerin auf einen anderen Rechtsträger oder eine Übertragung sämtlicher oder im Wesentlichen sämtlicher Vermögenswerte auf einen anderen Rechtsträger stattfindet, es sei denn, dass (i) dieser andere Rechtsträger, ein Unternehmen mit Sitz in einem Mitgliedstaat der Europäischen Union (und nach seinem Austritt aus der Europäischen Union auch im Vereinigten Königreich), der Schweiz oder den Vereinigten Staaten von Amerika ist, welches aufgrund einer Vereinbarung oder kraft Gesetz sämtliche Verpflichtungen der Darlehensnehmerin aus diesem Darlehensvertrag übernommen hat, und (ii) die wirtschaftliche oder finanzielle Lage dieses anderen Rechtsträgers nicht schlechter ist, als die der Darlehensnehmerin zum Zeitpunkt des Eintritts dieses Ereignisses, oder

(i) the Borrower is merged into another entity or all or substantially all of its assets are conveyed or transferred to another entity, unless (i) the entity is a corporation domiciled in a member state of the European Union (and following its exit from the European Union, the United Kingdom), Switzerland or the United States of America which assumes all obligations of the Borrower under this Loan Agreement either by an agreement or by operation of law, and (ii) the economic and financial situation of such entity is not less sound than that of the Borrower at the time of the occurrence of such event; or

(j) eine Wesentliche Nachteilige Änderung eingetreten ist.

(j) a Material Adverse Change has occurred; or

(2) Die Darlehensnehmerin wird die Darlehensgeberin unverzüglich (über die Zahlstelle) schriftlich über alle Angelegenheiten, die zu einem in § 8 (1) aufgeführten außerordentlichen Kündigungsgrund führen könnten benachrichtigen. Kündigungen sind der Darlehensnehmerin schriftlich (über oder mit Kopie an die Zahlstelle) zuzuleiten. Sollte das Darlehen ganz oder teilweise vorzeitig aus den in diesem § 8 (1) genannten Gründen gekündigt werden, ist die Darlehensnehmerin gegebenenfalls zur Zahlung einer Vorfälligkeitsentschädigung verpflichtet.

(2) The Borrower shall promptly notify the Lender (through Paying Agent) in writing on all matters which could lead to an event of default as set out in § 8 para. 1. Notices of termination have to be provided in writing to the Borrower through or with a copy to the Paying Agent. If the Loan is terminated prematurely in whole or in part for any reason set out in § 8 para. 1, the Borrower shall be obliged to pay a Prepayment Indemnity, if any.

(3) Ungeachtet der Bestimmungen des § 314 BGB finden die Bestimmungen von § 490 Abs. 1 BGB keine Anwendung.

(3) Notwithstanding the provisions of section 314 of the German Civil Code (BGB), the provisions of section 490 (1) of the German Civil Code (BGB) shall not apply.

§ 9 Übertragung

§ 9 Transfer

(1) Die Darlehensgeberin kann ihre vertraglichen Rechte und Pflichten aus dem Darlehensvertrag ganz oder in Teilbeträgen von mindestens EUR 500.000,00 und darüber hinaus in ganzen Vielfachen des Betrages von EUR 500.000,00 an einen Dritten im Wege der Vertragsübernahme übertragen.

(1) The Lender may transfer its contractual position hereunder in full or in partial amounts of at least EUR 500,000.00 and in whole multiples of EUR 500,000.00 above that - to a Third Party by way of assumption of contract.

(a) Im Falle der erstmaligen Ausplatzierung durch die Anfängliche Darlehensgeberin gilt Folgendes:

(i) Die Übertragung der vertraglichen Position an eine Darlehensgeberin, welche nicht unter die Definition des Dritten fällt oder an eine Privatperson ist unzulässig. Ebenso ist eine Unterbeteiligung an der vorgenannten vertraglichen Position nicht zulässig.

(ii) Die Übertragung erfolgt gemäß einer von der Anfänglichen Darlehensgeberin zu erstellenden Geschäftsbestätigung, die von der eintretenden Darlehens geberin gegenzuzeichnen ist. Die Zahlstelle wird die Darlehensnehmerin über jeden Übertragungsvorgang ohne schuldhaftes Zögern informieren.

(b) Für alle weiteren Übertragungs vorgänge gilt das Folgende:

(i) An eine Darlehensgeberin, die nicht unter die Definition des Dritten fällt, ist eine Übertragung der vertraglichen Position nur mit vorheriger schriftlicher Zustimmung der Darlehensnehmerin (mit Kopie an die Zahlstelle) zulässig. Eine Übertragung an Privatpersonen sowie eine Unterbeteiligung an der vorgenannten vertraglichen Position ist nicht zulässig.

(ii) Die Übertragung wird zu dem im Übertragungszertifikat (Anlage 2) genannten Übertragungsdatum wirk sam. Die Zahlstelle wird die Darlehensnehmerin über jeden Übertragungsvorgang ohne schuld haftes Zögern durch Vorlage einer Kopie des entsprechenden Über tragungszertifikats informieren.

(iii) Für den Fall, dass die Zahlstelle das Übertragungszertifikat weniger als fünf (5) Bankarbeitstage vor einem Zins zahlungstag erhalten hat, hat eine Zahlung der Darlehensnehmerin an die ausscheidende Darlehensgeberin gegenüber der eintretenden Darlehens geberin im Umfang der geleisteten Zahlung schuldbefreiende Wirkung.

(a) In connection with the initial placement of the contractual position by the Initial Lender the following shall apply:

(i) The transfer of the contractual position to a Lender which does not meet the definition of a Third Party or to a private individual or a sub-participation in the contractual position referred to above is not permitted.

(ii) The transfer will be effected by a confirmation of transaction (*Geschäftsbestätigung*) to be issued by the Initital Lender and countersigned by the joining Lender. The Paying Agent shall inform the Borrower with respect to each transfer without undue delay.

(b) For all following transfers of the contractual position the following shall apply:

(i) The transfer of the contractual position to a Lender which does not meet the definition of a Third Party is only permitted with the prior written consent of the Borrower (copy to the Paying Agent). A transfer to a private individual or a sub-participation in the contractual position referred to above is not permitted.

(ii) Such transfer shall become effective as of the transfer date set forth in the Transfer Certificate (Annex 2). The Paying Agent shall inform the Borrower with respect to each transfer without undue delay by submitting a copy of the relevant Transfer Certificate.

(iii) In the event that the Paying Agent receives a Transfer Certificate less than five (5) Banking Days before an Interest Payment Date, any payment made by the Borrower to the resigning Lender shall release the Borrower from its payment obligations to the joining Lender in the amount of such payment.

(2) Folge einer Übertragung ist, dass die Rechtsstellung einschließlich sämtlicher bestehen der Rechte und Pflichten der insoweit ausscheidenden Darlehensgeberin aus diesem Darlehensvertrag in dem Umfang, in dem übertragen wird, auf die eintretende Darlehensgeberin übergeht. Die derzeitige Darlehensgeberin verliert ihre Rechte und wird von ihren Verpflichtungen unter diesem Darlehensvertrag in dem Umfang frei, in dem diese auf die neue Darlehensgeberin übertragen wurden. Die Parteien sind sich einig, dass im Falle einer Übertragung ein gesondertes eigenständiges Vertragsverhältnis zwischen der Darlehensnehmerin und der neuen Darlehensgeberin entsteht, das im Wege der Abrede zwischen diesen geändert, aufgehoben, ergänzt oder anderweit modifiziert werden kann, ohne dass es der Mitwirkung sonstiger Parteien, insbesondere anderer Darlehensgeberinne, bedürfte.

(2) The result of a transfer is that all of the resigning Lender's rights and obligations under this Loan Agreement are passed over to the joining Lender to the extent that they are transferred. The Existing Lender shall cease to have rights and shall be released from its obligations under this agreement to the extent that they have been transferred to the New Lender. The Parties agree that in the case of a transfer a separate and independent contractual relationship will be established between the Borrower and the New Lender, which may be amended, cancelled, supplemented or otherwise modified by an agreement between them without requiring the involvement of any other party, in particular other Lenders.

Vorbehaltlich Absatz (1) (b) (iii) sind im Falle einer vollständigen oder teilweisen Übertragung die Verpflichtungen der Darlehensnehmerin gegenüber einer eintretenden Darlehensgeberin erst dann erfüllt, wenn der Erlös eingeht bzw. deren Konto gutgeschrieben wird.

Subject to subparagraph 1 (b) (iii) the obligations of the Borrower in the event of a complete or partial transfer, shall be fulfilled with regard to a joining Lender only upon the proceeds being received by or credited to its account.

Des Weiteren verpflichtet sich die ausscheidende Darlehensgeberin, Zahlungen der Darlehensnehmerin, die ab dem Wirksamwerden der Übertragung und hinsichtlich der Zinsen gegebenenfalls zeitanteilig gemäß § 4 (Zahlungen) an sie geleistet werden, unverzüglich an die eintretende Darlehensgeberin weiterzuleiten.

Furthermore the resigning Lender is obliged to promptly pass on any payments which the Borrower makes after a transfer has become effective and in relation to any interest which may have been paid *pro rata temporis* according to § 4 (Payments) to the joining Lender.

Sofern und soweit eine Übertragung nach diesem § 9 dazu führen würde, dass die Darlehensnehmerin Zusätzliche Beträge oder sonstige erhöhte Kosten nach § 5 zu tragen hätte, so ist die Darlehensnehmerin zur Zahlung dieser Beträge nur insoweit verpflichtet, als diese auch bei einer Zahlung an die ausscheidende Darlehens geberin angefallen wären, es sei denn die Zusätzlichen Beträge oder Kosten beruhen auf Umständen, die nach der Vertrags übernahme eingetreten sind.

If and to the extent that a transfer pursuant to this § 9 would result in the obligation of the Borrower to bear any Additional Amounts or other increased costs pursuant to § 5 hereof, the Borrower shall be obligated to pay such amounts only to such extent as these would have been incurred also in the case of payment to the resigning Lender, unless such Additional Amounts and costs are based on facts having occurred subsequent to the assignment.

(3) Mit Unterzeichnung dieses Darlehens vertrages erteilt die Darlehensnehmerin ihre vorherige Zustimmung zu jeder im Einklang mit § 9 (1) erfolgten Übertragung.

(3) By signing this Loan Agreement, the Borrower grants its prior consent to any such transfer made in compliance with § 9 para. 1.

(4) Die Darlehensgeberin ist berechtigt, alle Rechte aus diesem Vertrag zum Zwecke der Refinanzierung als Sicherheit auf die Deutsche Bundesbank, Banque Centrale du Luxembourg oder ein anderes Mitglied des europäischen Systems der Zentralbanken, die Schweizerische Nationalbank oder eine Förderbank des Euroraumes zu übertragen. Die Wirksamkeit der Übertragung unterliegt ausdrücklich keinen formalen Anforde rungen und keiner Anzeigepflicht an die Darlehensnehmerin. Übertragungen durch eine Zentralbank des Eurosystems oder Förderbank des Euroraumes unterliegen gleichfalls ausdrücklich keinen formalen Anforderungen und keiner Anzeigepflicht an die Darlehensnehmerin. Dies gilt ebenfalls für Rückabtretungen und mit Realisie rungsszenarien verbundene Abtretungen unter Beteiligung nationaler Zentralbanken im Eurosystem. Im Fall der Verwertung der vertraglichen Rechte durch eine Zentral bank des Eurosystems unterliegt diese nicht den Beschränkungen von § 9 (1).

(4) The Lender shall be authorized to transfer all its claims under this Loan to the Deutsche Bundesbank, Banque Centrale du Luxembourg or any other central bank of the ECB system or to the Swiss National Bank or any eurozone development bank (“Förderbank”) as security for refinancing purposes. For the validity of such transfer expressly no formal requirements and obligations to inform the Borrower shall be required. Likewise, in case of such transfers being made by any central bank of the ECB system or eurozone development bank expressly no formal requirements and obligations to inform the Borrower shall be required. This also applies to reassignment and assignments associated with realisation scenarios involving national central banks within the Eurosystem. In case of the liquidation of any rights arising out of this Loan Agreement by any central bank of the ECB system, the restrictions under clause 9 para. 1 shall not apply.

(5) Im Falle des Eintritts eines der in § 8 (1) genannten außerordentlichen Kündigungs rechte, das noch 20 Bankarbeitstage nach seinem Eintritt fortbesteht, unterliegt die daraufhin erfolgende Übertragung durch Vertragsübernahme keinen der in Abs. (1) genannten Beschränkungen, wenn der Kündigungsgrund zu diesem Zeitpunkt noch fortbesteht.

(5) If an event of default giving rise to an extraordinary termination right as set out in Article 8 para. 1 has occurred and is continuing 20 Banking Business Days after its occurrence, a subsequent transfer by way of assumption shall not be subject to any restrictions as set out in this para. 1 if such event of default continues at the time of the transfer.

(6) Die Darlehensnehmerin ist damit einver standen, dass in diesem Rahmen die Vertragsdaten einschließlich personen bezogener Daten von

(6) The Borrower hereby gives its consent to the forwarding of all information contained in this Loan Agreement including personal data of employees/board members to the

§ 10 Art der Rechte und Verpflichtungen einer Darlehensgeberin

§ 10 Nature of a Lender's Rights and Obligations

(1) Die Verpflichtungen einer Darlehensgeberin (mit Verpflichtungen einer anderen Darlehensgeberin aus dem Darlehensvertrag) sind nicht gesamtschuldnerisch. Keine der Darlehens geberinnen haftet für die Verpflichtungen einer anderen Darlehensgeberin aus dem Darlehensvertrag.

(1) The obligations of a Lender (and obligations of another Lender under this Loan Agreement) are not joint and several (*keine gesamtschuldnerische Haftung*). No Lender is liable for the obligations of any other Lender under the Loan Agreement.

(2) Die Rechte einer Darlehensgeberin (mit Rechten einer anderen Darlehensgeberin aus diesem Darlehensvertrag) sind nicht gesamtgläubigerisch. Die jeweils gemäß diesem Darlehensvertrag einer Darlehens geberin geschuldeten Beträge stellen eine gesonderte und unabhängige Verbindlich keit dar, und jede der Darlehensgeberinnen ist berechtigt, ihre Rechte aus diesem Darlehensvertrag unabhängig von einer anderen Darlehensgeberin durchzusetzen.

(2) The rights of a Lender (and rights of another Lender under this Loan Agreement) are not joint and several (*keine Gesamtgläubiger*). The amounts owed at any time under the Loan Agreement by the Borrower to any Lender shall constitute a separate and independent debt and each Lender shall be entitled to protect and enforce its rights arising out of this Loan Agreement independently from another Lender.

§ 11 Information

§ 11 Information

(1) Die Darlehensnehmerin wird die zur Erfüllung der Vorgaben des § 18 Kreditwesengesetz (KWG) erforderlichen Unterlagen und anderen Informationen, die die Darlehensgeberin zur Erfüllung ihrer gesetzlichen Verpflichtungen benötigt, auf Anforderung durch die Darlehensgeberin rechtzeitig übermitteln. Die Darlehens nehmerin ist insbesondere verpflichtet, der Darlehensgeberin (über die Zahlstelle) während der Laufzeit des Darlehens folgende Dokumente zur Verfügung zu stellen:

(1) For the purposes of complying with the requirements under section 18 of the German Banking Act (KWG), the Borrower shall submit on request of the Lender in a timely manner to the Lender any documents and information required to comply with the Lender's statutory obligations. During the term of the Loan, the Borrower shall in particular supply the Lender with following documents (through the Paying Agent):

(a) sobald diese veröffentlicht sind, in jedem Fall aber innerhalb von einhundertachtzig (180) Tagen nach dem Ende des Geschäftsjahrs, den geprüften Konzern jahresabschluss der Darlehensnehmerin, und

(a) the audited consolidated financial statements of the Borrower as soon as they are publicly available but in any event no later than one hundred and eighty (180) days after the end of the Borrower's financial year; and

(b) weitere Informationen, die eine Darlehens geberin zur Erfüllung gesetzlicher Anforderungen angemessenerweise anfordern kann.

(b) any other information a Lender may reasonably request in order to comply with legal requirements.

(2) Die Verpflichtung zur Lieferung von Dokumenten nach § 11 (1) entfällt, sofern diese Dokumente auf der Webseite der Darlehensnehmerin (in speicher- oder druckbarer Weise) frei zugänglich veröffentlicht sind.

(2) The obligation to provide with documents pursuant to § 11 para. 1 shall cease to apply if these documents are freely accessible on the Borrower's website (in a form that can be saved or printed).

(3) Die Darlehensnehmerin verpflichtet sich

(a) einmal pro Geschäftsjahr einen aktualisierten ESG-Bericht einzuholen;

(b) dem ESG-Ratinganbieter alle Informationen zur Verfügung zu stellen, die der ESG-Ratinganbieter vernünftigerweise für die Bestimmung des ESG-Ratings benötigt und anfordert;

(c) der Zahlstelle ein ESG-Zertifikat (Anlage 3) mit dem zugewiesenen ESG-Rating nebst Kopie des zugehörigen ESG-Bericht zur Verfügung zu stellen unverzüglich nach Veröffentlichung eines solchen ESG-Rating-Berichts.

(4) Die Darlehensnehmerin ermächtigt die Darlehensgeberin, alle Unterlagen, Daten und Informationen, die der Darlehensgeberin hierfür erforderlich, zweckdienlich oder geeignet erscheinen, zur Prüfung an potenzielle Dritte (oder ein Mitglied des europäischen Systems der Zentralbanken oder die Schweizerische Nationalbank) für die unter § 9 (4) beschriebenen Zwecke an Personen, die aus technischen oder rechtlichen Gründen in die Abwicklung einer Übertragung einzubinden sind (z.B. Rechtsberater, Rating-Agenturen, Wirtschaftsprüfer) und an staatliche Gerichte und Behörden (insbesondere Aufsichtsbehörden), die gemäß Gesetz eine Offenlegung verlangen, weiterzuleiten bzw. ihnen bekanntzugeben, und befreit die Darlehensgeberin insoweit vom Bankgeheimnis.

(5) Im Übrigen verpflichten sich die Parteien dieses Darlehensvertrages, vertrauliche Informationen und Dokumente, die sie im Zusammenhang mit diesem Darlehen

§ 12 Mitteilungen

Alle Mitteilungen und Anfragen oder sonstige Kommunikation gemäß diesem Darlehensvertrag sind schriftlich (auch per Fax oder als pdf-Datei) abzufassen und wie folgt zu adressieren:

(1) Sofern sie an die **Darlehensnehmerin** gerichtet sind, an ihre folgende Anschrift:

(3) The Borrower undertakes to:

(a) obtain an up-dated ESG Report once in each of its financial years;

(b) provide the ESG Rating Provider with all information, which the ESG Rating Provider reasonably requires and requests for the determination of the ESG Rating; and

(c) provide to the Paying Agent with an ESG Certificate (Annex 3) with the assigned ESG Rating together with a copy of the related ESG Report without undue delay following the publication of such ESG Rating Report.

(4) The Borrower hereby authorizes the Lender to pass on or to disclose for review any such documents, data and information as the Lender may consider necessary, useful or appropriate to any potential Third Party (or to a member of the European system of central banks or to the Swiss National Bank for the purposes set out in § 9 para. 4 or to such persons, who are involved in the settlement of the transfer for technical or legal reasons (such as legal advisors, rating agencies, auditors) or to governmental courts and authorities (especially supervisory authorities) that require disclosure by law, and therefore releases the Lender from banking confidentiality.

(5) Apart from that, the Parties agree to treat information and documents received in connection with this Loan as confidential. Legal or regulatory disclosure requirements

§ 12 Notices

Any notices, queries or other communication under this Loan Agreement shall be made in writing (including by fax or pdf file) and shall be addressed as follows:

(1) If intended for the **Borrower**, to the following address:

QIAGEN N.V.
Hulsterweg 82
5912 PL Venlo
The Netherlands

Tel. + 31 77 3556644
Fax + 31 77 3556640

z. Hd. v. Leiter Global Treasury
global.treasury@qiagen.com

QIAGEN N.V.
Hulsterweg 82
5912 PL Venlo
The Netherlands

Phone: + 31 77 3556644
Facsimile: +31 77 3556640

Attention: Head of Global Treasury
global.treasury@qiagen.com

(2) Sofern sie an die **Darlehensgeberin** oder an die **Zahlstelle** gerichtet sind, an folgende Anschrift:

(2) If intended for the **Lender** or for the **Paying Agent**, to the following address:

Bayerische Landesbank
Brienner Straße 18
80333 München
Bundesrepublik Deutschland

Tel. +49 (0)89 - 2171 - 23409
Fax +49 (0)89 - 2171 - 600610
e-mail: PayingAgentssd@bayernlb.de

z. Hd. v. 4295 Team Emissionen & Regulatorik Handelsservice

Bayerische Landesbank
Brienner Strasse 18
80333 Munich
Federal Republic of Germany (FRG)

Phone: +49 (0)89 - 2171 - 23409
Facsimile: +49 (0)89 - 2171 – 600610
e-mail: PayingAgentssd@bayernlb.de

Attention: 4295 Team

Im Falle einer Übertragung gemäß § 9 sind Mitteilungen, die an eine eintretende Darlehensgeberin gerichtet sind, auch an die Zahlstelle zu adressieren.

In the event of a transfer pursuant to § 9, any notices to a joining Lender shall be addressed to the Paying Agent.

§ 13 Sonstige Bestimmungen

§ 13 Miscellaneous

(1) Die Darlehensnehmerin bestellt für die Dauer des Darlehensvertrages QIAGEN GmbH zur Zustellungsbevollmächtigten für gerichtliche Zustellungen in Deutschland.

(1) For the term of this Loan Agreement, the Borrower appoints QIAGEN GmbH as the agent for the service of process in Germany.

(2) Die Darlehensnehmerin verpflichtet sich, der Darlehensgeberin alle notwendigen Informationen und Unterlagen zur Verfügung

(2) The Borrower undertakes to provide the Lender with all information and data the Lender deems necessary to fulfill the

(3) Die Darlehensnehmerin kann gegen Forderungen der Darlehensgeberin nur aufrechnen und Pfandrechte oder Zurück behaltungsrechte geltend machen, wenn die Forderungen der Darlehensnehmerin unbestritten oder rechtskräftig festgestellt sind. Solange und soweit das Darlehen zum Sicherungsvermögen der Darlehensgeberin im Sinne von § 125 VAG oder, auch im Fall von Insolvenzverfahren, zu einer aufgrund gesetzlicher Vorschriften des deutschen Rechts zwingend zu bildenden Deckungsmasse gehört, oder zu Zwecken der Besicherung an eine Notenbank des Eurosystems abgetreten wurde, verzichtet die Darlehensnehmerin darauf, ihr Recht auf Aufrechnung sowie Pfandrechte und Zurückbehaltungsrechte auszuüben. Dies gilt auch im Verhältnis zwischen der Darlehensnehmerin und etwaigen Rechtsnachfolgern der Darlehensgeberin.

(3) The Borrower may only offset claims, exercise any liens or any retention rights that are uncontested or have been legally established with final and binding effect against claims of the Lender. The Borrower hereby waives the exercise of any right of set-off, liens or any retention right if and to the extent that the Loan belongs to the reserved assets of the Lender within the meaning of section 125 German Insurance Supervisory Act (VAG) or to covering funds which must be set up pursuant to the laws of the Federal Republic of Germany, including in cases of insolvency proceedings or if the assignment was made to a national central bank within the Euro system for collateralisation purposes. This also applies in relation between the Borrower and any legal successor of the Lender.

(4) Die Darlehensnehmerin ist damit einverstanden, dass personenbezogene Daten gespeichert, verarbeitet und im Rahmen der Zweckbestimmung dieses Darlehens – auch an gemäß § 9 (1) eintretende Darlehensgeberinnen – übermittelt werden.

(4) The Borrower consents to its personal data being recorded, processed and, for the purposes of this Loan, disclosed to any joining Lenders in accordance with § 9 para 1.

(5) Änderungen dieses Darlehensvertrages bedürfen der Schriftform. Dies gilt auch für einen Verzicht auf diese Schriftformklausel.

(5) Any amendments of this Loan Agreement must be made in writing in order to become effective. This shall also apply to any waiver of this section.

(6) Sollte irgendeine Bestimmung dieses Darlehensvertrages ganz oder teilweise rechtlich unwirksam oder undurchsetzbar sein oder werden, so bleibt die Wirksamkeit und Durchsetzbarkeit der übrigen Bestimmungen dieses Vertrages davon unberührt. Eine sich daraus ergebende Regelungslücke ist durch ergänzende Auslegung unter ordnungsgemäßer Berücksichtigung der Interessen der Parteien zu schließen.

(6) Should any provision of this Loan Agreement be or become entirely or partially invalid or unenforceable, the validity or enforceability of the remaining provisions shall not be affected thereby. Any omission resulting therefrom shall be remedied by supplemental provision which takes due account of the interests of the Parties.

(7) Dieser Darlehensvertrag wird in zwei (2) Exemplaren ausgefertigt, von denen je eines die Darlehensnehmerin und die Darlehensgeberin erhält.

(7) This Loan Agreement is executed in two (2) originals, one of which will be retained by the Borrower and one by the Lender.

(8) Dieser Darlehensvertrag unterliegt dem Recht der Bundesrepublik Deutschland. Nicht ausschließlicher Gerichtsstand für alle Rechtsstreitigkeiten aus oder im Zu sammenhang mit diesem Darlehensvertrag ist München, Bundesrepublik Deutschland.

(8) This Loan Agreement is subject to the laws of the Federal Republic of Germany. Non-exclusive place of jurisdiction for any disputes arising in connection with this Loan Agreement shall be Munich, Federal Republic of Germany.

(9) Dieser Darlehensvertrag ist in deutscher Sprache abgefasst und mit einer unverbindlichen Übersetzung in die englische Sprache versehen. Allein der deutsche Wortlaut ist maßgeblich und rechtsverbindlich. Die englische Übersetzung ist in jeder Hinsicht unverbindlich.

(9) This Loan Agreement is drafted in the German language and provided with a non-binding English translation. Only the German text is valid and binding. The English translation is non-binding in every respect and provided for convenience only

Unterschriftenseite folgt

Signature page follows.

QIAGEN N.V.

als Darlehensnehmerin
as Borrower

Venlo, den 4. Juli 2022
Venlo, 4 July 2022

Unterschrift(en): _____
Signature(s)

Name(n):
Name(s)

Bayerische Landesbank

als Darlehensgeberin
as Lender

München, den 4. Juli 2022
Munich, 4 July 2022

Unterschrift(en): _____
Signature(s)

Name(n): Paul Kuhn Rudolf Gmeinwieser
Name(s)

Anlage 1

Auszahlungsvoraussetzungen

(1) Übergabe des von der Darlehensnehmerin ordnungsgemäß unterzeichneten Darlehensvertrags an die Anfängliche Darlehensgeberin.

(2) Vorlage eines externen Rechtsgutachtens (Legal Opinion) des Rechtsberaters der Darlehensnehmerin, gerichtet an die Arrangeure und die Abtretungsempfänger der Anfänglichen Darlehensgeberin gemäß § 9 (1) (a), zum niederländischen Recht in englischer Sprache hinsichtlich der Rechtsfähigkeit der Darlehensnehmerin und ordnungsgemäßen Ermächtigung zum Abschluss des Darlehensvertrages, der ordnungsgemäßen Unterzeichnung des Darlehensvertrags und der Gültigkeit der Wahl deutschen Rechts sowie die Anerkennung des unter diesem Vertrag gewählten Gerichtsstandes und der Vollstreckbarkeit des Urteils eines deutschen Gerichts in den Niederlanden, das den Anforderungen der Bayerischen Landesbank als Anfänglicher Darlehensgeberin und den Anforderungen der Arrangeure genügt.

(3) Vorlage eines der Darlehensgeberin ge nehmen Nachweises, dass für das Eingehen des Darlehens keine Genehmigung/keine Unterrichtung des Betriebsrates (*ondernemingsraad*) der Darlehensnehmerin in den Niederlanden vorgeschrieben ist.

(4) Die Abgabenordnung verpflichtet die Darlehensgeberin, die Legitimation aller Zeichnungs berechtigten, deren Zeichnungsberechtigung von der Darlehensnehmerin nachzuweisen ist, zu prüfen. Es ist deshalb erforderlich, dass alle zeichnungsberechtigten Personen der Darlehensgeberin die von ihr angeforderten Legitimationsdokumente vorlegen:

Ausweiskopien der Personen, die für die Darlehensnehmerin den Darlehensvertrag unterzeichnen; (nebst folgender Informationen, sofern diese nicht im Ausweis aufgeführt sind: (i) Vorname und Nachname, (ii) Geburtsort, (iii) Geburtsdatum, (iv) [illegible]

Annex 1

Conditions Precedent

(1) Submission of the Loan Agreement duly signed by the Borrower to the Initial Lender.

(2) An external legal opinion, addressed to the Arrangers and to the transferees of the Initial Lender in accordance with § 9 (1) (a), from the Borrower's legal adviser to the laws of the Netherlands in the English language regarding the Borrower's capacity and due authorization to enter into the Loan Agreement, the due execution of the Loan Agreement and the validity of the choice of German law as well as the submission to jurisdiction chosen pursuant to this Loan Agreement and the enforceability of a German court ruling in the Netherlands that satisfies requirements of Bayerische Landesbank as Original Lender and the requirements of the Arrangers.

(3) Evidence satisfactory to the Lender that the incurrence of the Loan is not subject to approval/consideration by the Borrower's works council (*ondernemingsraad*) in the Netherlands.

(4) The German General Fiscal Code (*Abgabenordnung*) obliges the Lender to examine the identity of the authorized signatories (*Legitimationsprüfung*) whose authority to sign is to be proven by the Borrower. Each authorized representative is therefore required to present documents for identification purposes to the Lender as requested by it.:

Copies of official identity cards of persons who sign the Loan Agreement on behalf of the Borrower (in addition to the following information if it is not provided on the identity cards): (i) first and last name (ii) place of birth, (iii) date of birth, (iv) nationality, (v) [illegible]

Informationen über den wirtschaftlich Berechtigten der Darlehensnehmerin, bestehend aus (i) Vorname (alle) und Nachname, (ii) Geburtsdatum, (iii) Wohnadresse / Wohnsitzland und (iv) deutsche Steuernummer (Steueridentifikationsnummer) - nur wenn eine natürliche Person ihren gewöhnlichen Aufenthalt in Deutschland hat

Information about the Borrower's beneficial owner, comprising (i) first name (all) and last name, (ii) date of brirth, (iii) residential address/country of domicile and (iv) German tax number (*Steueridentifikationsnummer*) - only if a natural person has their usual residence in Germany

(5) Vorlage eines aktuellen beglaubigten Auszugs aus dem Handelsregister der Darlehensnehmerin oder eines vergleichbaren Existenznachweises.

(5) A current certified excerpt of the Borrower's listing in the commercial register or equivalent proof of existence.

(6) Vorlage der geprüften Konzernjahres abschlüsse der Darlehensnehmerin einschließlich Bilanz, Gewinn- und Verlustrechnung, Lagebericht, Anhang und Prüfungsbericht der letzten beiden abgeschlossenen Geschäftsjahre.

(6) Copy of the Borrower's audited consolidated annual financial statements for the two most recently completed financial years including balance sheet, profit and loss account, management report, notes and auditor's report.

(7) Bestätigung der Zustellungsbevoll mächtigten gemäß § 13 (1), dass diese mit ihrer Ernennung einverstanden ist.

(7) Confirmation that the process agent referred to in § 13 para. 1 has accepted its appointment.

(8) Bestätigung der Darlehensnehmerin über das Nichtvorliegen eines Kündigungs grundes, wie in § 8 (1) genannt.

(8) Confirmation of the Borrower that no events of default as stated in clause 8 para. 1 have occurred.

(9) Vorlage einer Kopie des Original ESG-Berichts.

(9) Copy of the Original ESG Report.

Anlage 2

Übertragungszertifikat

Von:

1. ● nachfolgend „**Derzeitige Darlehensgeberin**“ und

2. ● nachfolgend „**Neue Darlehensgeberin**“

An: Bayerische Landesbank, als Zahlstelle für die im nachstehenden Darlehensvertrag definierte Darlehensnehmerin

Datum: ●

Dieses Übertragungszertifikat bezieht sich auf einen Schuldscheindarlehensvertrag vom 4. Juli 2022 zwischen **QIAGEN N.V**. als Darlehensnehmerin und der **Bayerischen Landesbank** als Anfängliche Darlehensgeberin und Zahlstelle, gemäß dem die Anfängliche Darlehensgeberin, der Darlehensnehmerin ein Darlehen in Höhe von EUR 7.500.000 zur Verfügung gestellt hat. Die in dem Darlehensvertrag definierten Begriffe haben in diesem Übertragungszertifikat, sofern sie in diesem Zertifikat nicht abweichend definiert werden, die gleiche Bedeutung wie in dem Darlehensvertrag.

1. Die Derzeitige Darlehensgeberin:

   (a) überträgt hiermit im Wege der Vertragsübernahme, ihre Rechtstellung aus dem Darlehensvertrag in Höhe des aus dem Anhang zu diesem Übertragungszertifikat ersichtlichen Anteils am Gesamtnennbetrag, zusammen mit allen hiermit verbundenen Rechten und Ansprüchen mit wirtschaftlicher Wirkung ab dem in dem Anhang zu diesem Übertragungszertifikat genannten Übertragungsdatum (das „**Übertragungsdatum**“) (einschließlich) auf die Neue Darlehensgeberin. Künftige Zinsansprüche sind nur in dem Umfang mit übertragen, als sie auf die Zeit ab dem Übertragungsdatum (einschließlich) entfallen.

Annex 2

Transfer Certificate

From:

1. ●, hereinafter **"Existing Lender"** and

2. ●, hereinafter "**New Lender**"

To: Bayerische Landesbank, as Paying Agent for the Borrower defined in the Loan Agreement referred to below

Date: ●

This Transfer Certificate relates to a Loan granted under a loan agreement dated 4 July 2022 made by and between **QIAGEN N.V**. as Borrower and **Bayerische Landesbank** as Initial Lender and Paying Agent under which the Initial Lender has, subject to the terms thereof, made available to the Borrower a Loan in the amount of EUR 7,500,000. Terms defined in the Loan Agreement shall, unless otherwise defined herein, have the same meanings in this Transfer Certificate as in the Loan Agreement.

1. The Existing Lender:

   (a) hereby transfers and assigns by way of assumption of contract (*Vertragsübernahme*) all of its contractual rights under the Loan Agreement in the proportion of the aggregate principal amount shown in the Schedule to this Transfer Certificate together with all related rights and claims with economic effect from the Transfer Date (including) as specified in the Schedule to this Transfer Certificate (the “**Transfer Date**”) to the New Lender. Future claims to interest shall only be transferred to the extent they fall on or after the Transfer Date.

(b) bestätigt, dass, soweit Einzelheiten in dem Anhang zu diesem Übertragungs zertifikat unter der Überschrift „Anteil der Derzeitigen Darlehensgeberin an dem zu übertragenden Darlehen“ aufgeführt sind, diese Einzelheiten den Betrag ihrer Beteiligung (die „**Beteiligung“**) an dem Darlehen akkurat zusammenfassen.

(b) confirms that to the extent that details appear in the Schedule to this Transfer Certificate under the heading “Existing Lender’s Participation in the Loan to be transferred” such details accurately summarize the amount of its participation in the Loan (the “**Participation**”).

2. Die Neue Darlehensgeberin:

(a) nimmt die Übertragung gemäß vorstehender Ziffer 1 (a) hiermit an und

(b) bestätigt, dass sie eine Kopie des Darlehensvertrages zusammen mit allen sonstigen Dokumenten und Informationen erhalten hat, die sie im Zusammenhang mit dieser Transaktion angefordert hat.

2. The New Lender:

(a) hereby accepts the transfer and assignment as mentioned in clause 1 (a) above and

(b) confirms that it has received a copy of the Loan Agreement and all other documents and information which it has requested in connection with this transaction.

3. Die Derzeitige Darlehensgeberin übernimmt keine Haftung für:

(a) die finanzielle Lage der Darlehensnehmerin und

(b) die Erfüllung und Beachtung der Verpflichtungen der Darlehensnehmerin aus dem Schuldscheindarlehensvertrag (es sei denn, dass dies ausdrücklich darin vereinbart wurde).

Die Derzeitige Darlehensgeberin übernimmt jedoch die Veritätshaftung nach den gesetzlichen Bestimmungen.

3. The Existing Lender does not assume any liability for:

(a) the financial condition of the Borrower; and

(b) the performance of or the compliance with the obligations by the Borrower under the Loan (save as expressly agreed otherwise therein).

The Existing Lender assumes liability for the legal validity of the claims under the Loan in accordance with the statutory provisions (*Veritätshaftung*).

4. Die Neue Darlehensgeberin erkennt an, dass die Derzeitige Darlehensgeberin unter keinen Umständen dazu verpflichtet ist, (i) eine Rückübertragung der Vertragsstellung oder einzelner Rechte oder Verpflichtungen aus dem Darlehensvertrag durch die Neue Darlehensgeberin zu akzeptieren oder (ii) Verluste zu tragen, die der Neuen Darlehensgeberin direkt oder indirekt entstehen, einschließlich Verlusten wegen Nichterfüllung der Verpflichtungen der Darlehensnehmerin aus dem Darlehensvertrag.

4. The New Lender acknowledges that the Existing Lender is under no obligation whatsoever (i) to accept in whole or in part a retransfer of the contractual position or individual rights or obligations under the Loan Agreement from the New Lender or (ii) to bear any losses directly or indirectly incurred by the New Lender including losses resulting from the non-performance by the Borrower of its obligations under the Loan Agreement.

5. Die Neue Darlehensgeberin bestätigt, dass für den Fall, dass die Zahlstelle ein Übertragungszertifikat weniger als fünf (5) Bankarbeitstage vor einem Zinszahlungstag erhält, jede Zahlung der Darlehensnehmerin (über die Zahlstelle) an die Derzeitige Darlehensgeberin schuldbefreiende Wirkung gegenüber der Neuen Darlehensgeberin im Umfang der geleisteten Zahlung hat.

5. The New Lender confirms that in case the Paying Agent receives a Transfer Certificate less than five (5) Banking Days before an Interest Payment Date, any payment made by the Borrower (through the Paying Agent) to the Existing Lender shall release the Borrower from its payment obligations towards the New Lender in the amount of such payment.

6. Sollte irgendeine Bestimmung dieses Übertragungszertifikats ganz oder teilweise rechtlich unwirksam oder undurchsetzbar sein oder werden, so bleibt die Wirksamkeit und Durchsetzbarkeit der übrigen Be stimmungen dieses Übertragungszertifikats davon unberührt. Eine sich daraus ergebende Regelungslücke ist durch ergänzende Auslegung unter ordnungs gemäßer Berücksichtigung der Interessen der Parteien dieses Übertragungszertifikats zu schließen.

6. Should any provision of this Transfer Certificate be or become entirely or partially invalid or unenforceable, the validity or enforceability of the remaining provisions shall not be affected thereby. Any omission resulting therefrom shall be remedied by supplemental interpretation under due consideration to the interests of the Parties.

7. Dieses Übertragungszertifikat unterliegt deutschem Recht. Nicht ausschließlicher Gerichtsstand für alle Rechtsstreitigkeiten aus oder im Zusammenhang mit diesem Übertragungszertifikat ist [●].

7. This Transfer Certificate shall be governed by German law. Non-exclusive place of jurisdiction for any disputes arising in connection with this agreement shall be [●].

Die Derzeitige Darlehensgeberin: ●
The Existing Lender: ●

Unterschrift(en):
Signature(s): _____

Name(n):
Name(s) _____

Die Neue Darlehensgeberin: ●
The New Lender: ●

Unterschrift(en):
Signature(s): _____

Name(n):
Name(s) _____

Anhang zum Übertragungszertifikat	**Schedule to the Transfer Certificate**
Derzeitige Darlehensgeberin: ●	Existing Lender: ●
Neue Darlehensgeberin: ●	New Lender: ●
Übertragungsdatum: ●	Transfer Date: ●
Anteil der Derzeitigen Darlehensgeberin an dem zu übertragenden Darlehen	**Existing Lender's Participation in the Loan to be transferred**
Betrag der Beteiligung an dem Darlehen: EUR ● zu übertragen: EUR ●	Amount of Participation in the Loan: EUR ● Amount thereof to be transferred: EUR ●
Angaben zur Neuen Darlehensgeberin:	**Details of New Lender:**
Anschrift für Mitteilungen: ●	**Address for notices:** ●
Kontaktperson: ● Telefon: ● Telefax: ●	Contact name: ● Phone: ● Facsimile: ●
Kontonummer: ●	Account number: ●

Anlage 3

Muster des ESG-Zertifikats

Von:

[Darlehensnehmerin]

An: Bayerische Landesbank, als Zahlstelle für die im nachstehenden Darlehensvertrag definierte Darlehensnehmerin

Datum: ●

Sehr geehrte Damen und Herren,

dieses ESG-Zertifikat bezieht sich auf einen Schuldscheindarlehensvertrag vom 4. Juli 2022 zwischen **QIAGEN N.V**. als Darlehensnehmerin und der **Bayerischen Landesbank** als Anfängliche Darlehensgeberin und Zahlstelle, gemäß dem die Anfängliche Darlehensgeberin, der Darlehensnehmerin ein Darlehen in Höhe von EUR 7.500.000 zur Verfügung gestellt hat. Die in dem Darlehensvertrag definierten Begriffe haben in diesem ESG-Zertifikat, sofern sie in diesem Zertifikat nicht abweichend definiert werden, die gleiche Bedeutung wie in dem Darlehensvertrag.

1. Das ESG-Rating beträgt: [*ESG-Rating einfügen*] gemäß dem jüngsten ESG Bericht vom [ ] des ESG-Ratinganbieter.

2. Das ESG-Rating [[liegt im Oberen ESG-Ratingbereich]/[entspricht dem ESG-Basisrating]/[liegt im Unteren ESG-Ratingbereich]].

3. Die Marge [[ist um 2,5 Basispunkte p.a. zu senken]/[wird nicht angepasst]/[ist um 2,5 Basispunkte p.a. zu erhöhen]].

Mit freundlichen Grüßen

QIAGEN N.V.

Signature: _____

Name:

Function:

Annex 3

Form of ESG Certificate

From:

[Borrower]

To: Bayerische Landesbank, as Paying Agent for the Borrower defined in the Loan Agreement referred to below

Date: ●

Dear Sir or Madam,

This ESG-Certificate relates to a Loan granted under a loan agreement dated 4 July 2022 made by and between **QIAGEN N.V**. as Borrower and **Bayerische Landesbank** as Initial Lender and Paying Agent under which the Initial Lender has, subject to the terms thereof, made available to the Borrower a Loan in the amount of EUR 7,500,000. Terms defined in the Loan Agreement shall, unless otherwise defined herein, have the same meanings in this ESG Certificate as in the Loan Agreement.

1. The ESG Rating is: [*insert ESG Rating*] according to the latest available ESG Report dated [ ] of the ESG Rating Provider.

2. The ESG Rating [[is in the Upper ESG Rating Range]/[equal to the Base ESG Rating]/[in the Lower ESG Rating Range]].

3. The Margin [[shall be reduced by 2.5 bps p.a.]/[will not be adjusted]/[shall be increased by 2.5 bps p.a.]].

Yours sincerely

QIAGEN N.V.

Signature: _____

Name:

Function:

NAMENSSCHULDVERSCHREIBUNG / REGISTERED NOTE

ausgegeben am 16. August 2022 und fällig am 16. August 2035
issued on 16 August 2022 and due on 16 August 2035

im Gesamtnennbetrag von
with an aggregate nominal amount of

EUR 70.000.000 (in Worten: siebzig Millionen Euro)
EUR 70,000,000 (in words: seventy million Euro)

Diese Urkunde (die „**Urkunde**") verbrieft 70 Namensschuldverschreibungen im Nennbetrag von je EUR 1.000.000, ausgegeben von der

QIAGEN N.V.
Hulsterweg 82
5912 PL Venlo
The Netherlands

(die „**Emittentin**").

This certificate (the "**Certificate**") represents 70 registered notes with a denomination of EUR 1.000,000 each issued by

QIAGEN N.V.
Hulsterweg 82
5912 PL Venlo
The Netherlands

(the "**Issuer**").

Die Emittentin verpflichtet sich, den Gläubigern die auf die Namensschuldverschreibungen zahlbaren Beträge zu zahlen, insbesondere Zinsen und Kapital, und die in den beigefügten Anleihebedingungen (die „**Anleihebedingungen**"), die fester Bestandteil dieser Urkunde sind, angegebenen anderen Verpflichtungen zu erfüllen.

Die Übertragung der sich aus den Namensschuldverschreibungen ergebenden Rechte und Ansprüche sowie des Eigentums an dieser Urkunde erfolgt ausschließlich auf Grundlage einer ordnungsgemäßen Eintragung in dem von der Deutsche Bank Aktiengesellschaft, Frankfurt am Main, als Registerstelle unterhaltenen Register. Nur die ordnungsgemäß im Register eingetragenen Gläubiger haben Anspruch auf Zahlungen auf die Namensschuldverschreibungen.

Die Emittentin bestätigt, dass die Deutsche Bank Aktiengesellschaft zum heutigen Tag im Register ordnungsgemäß als Inhaber der Namensschuldverschreibungen (der „**Ursprüngliche Gläubiger**") in Höhe des Gesamtnennbetrags eingetragen ist.

Die Namensschuldverschreibungen unterliegen deutschem Recht. Nur die deutsche Fassung ist verbindlich; bei dem englischen Text handelt sich um eine unverbindliche Übersetzung.

Venlo, den 12. August 2022

QIAGEN N.V.

(als Emittentin)

The Issuer agrees to pay to the Noteholders the amounts payable in respect of the Registered Notes, in particular interest and principal, and perform such other duties as set out in the attached conditions of issue (the "**Conditions of Issue**") which form an integral part of this Certificate.

The rights and claims arising out of the Registered Notes as well as the title to this Certificate will be transferred solely on the basis of due registration in the registry maintained by Deutsche Bank Aktiengesellschaft, Frankfurt am Main as Registrar. Solely the duly registered Noteholder in the registry may claim payments under the Registered Notes.

The Issuer confirms that Deutsche Bank Aktiengesellschaft is duly registered in the registry as Noteholder of the Registered Notes (the "**Initial Noteholder**") of the whole aggregate nominal amount as of the present day.

The Registered Notes are governed by German Law. The German version is binding and the English text is a non-binding translation.

Venlo, on 12 August 2022

Anleihebedingungen / Conditions of Issue

Nur die deutsche Fassung ist verbindlich; bei dem englischen Text handelt sich um eine unverbindliche Übersetzung.

Only the German version is binding; the English text is a non-binding translation.

§ 1
(Nennbetrag, Form, Definitionen)

(1) *Nennbetrag.* Die Namensschuldverschreibungen (die „**Namensschuldverschreibungen**") werden von der Emittentin im Gesamtnennbetrag von EUR 70.000.000 (in Worten: siebzig Millionen Euro) ausgegeben. Der Nennbetrag einer Namensschuldverschreibung beläuft sich auf je EUR 1.000.000.

(2) *Form.* Die Namensschuldverschreibungen sind in einer Urkunde verbrieft (die „**Urkunde**"), die mit der eigenhändigen Unterschrift von ordnungsgemäß bevollmächtigten Vertretern der Emittentin versehen und auf den Namen des Ursprünglichen Gläubigers eingetragen ist. Eine nach einer Übertragung auf den Namen des Zessionars und gegen Übernahme der Kosten ausgestellte neue Namensurkunde wird nach Einreichung dieser Namensurkunde und der jeweiligen Abtretungsvereinbarung bei der Registerstelle zur Abholung bereitgehalten oder auf Wunsch, Kosten und Gefahr des Zessionars an die in der Abtretungsvereinbarung genannte Adresse des Zessionars gesandt. Jede Bezugnahme in den Anleihebedingungen auf eine „**Namensschuldverschreibung**" oder „**Urkunde**" umfasst auch eine Bezugnahme auf jede einzelne Namensschuldverschreibung oder Urkunde, die in Verbindung mit der Übertragung der Urkunde ausgestellt wurde oder wird.

(3) *Bestimmte Definitionen.*

§ 1
(Denomination, Form, Definitions)

(1) *Denomination.* The registered notes (the "**Registered Notes**") are issued by the Issuer in an aggregate nominal amount of EUR 70,000,000 (in words: seventy million Euro). The denomination of a Registered Note is EUR 1,000,000 each.

(2) *Form.* The Registered Notes are represented by a certificate (the "**Certificate**") which is signed manually by duly authorized representatives of the Issuer and which is registered in the name of the Initial Noteholder. An individual registered note would only be issued upon request and at the cost of any Noteholder and may be collected at the offices of the Registrar or dispatch to the address stated in the assignment agreement at the risk of the relevant Noteholder and in either case against submission to the Registrar of this Certificate together with the relevant executed assignment agreement. Any reference in the Conditions of Issue to "**Registered Note**" or "**Certificate**" includes a reference to every individual Registered Note or Certificate which was or will be issued in connection with the transfer of the Certificate.

(3) *Certain Definitions.*

„**Geschäftstag**" bezeichnet jeden Tag (ausgenommen Samstage und Sonntage), an dem (i) das Trans-European Automated Real-time Gross Settlement Express Transfer (TARGET2) System oder ein von der Europäischen Zentralbank bestimmtes Nachfolgesystem betriebsbereit ist, um Zahlungen abzuwickeln und (ii) Banken in Düsseldorf für Bankgeschäfte geöffnet sind.

"**Business Day**" means each day (excluding Saturdays and Sundays), on which (i) the Trans-European Automated Real-time Gross Settlement Express Transfer (TARGET2) system or any successor system designated by the European Central Bank is operative to settle payments and (ii) banks in Düsseldorf are open for general business.

„**Gläubiger**" bezeichnet den Ursprünglichen Gläubiger und nach einer Abtretung jede Person, die jeweils in dem von der Registerstelle unterhaltenen Register als Gläubiger eingetragen ist.

"**Noteholder**" means the Initial Noteholder and, following an assignment, any person who is at any time registered in the registry kept by the Registrar as Noteholder.

„**Konzern**" bezeichnet die Emittentin und alle konsolidierten Tochtergesellschaften. Zur Vermeidung von Unklarheiten sei darauf hingewiesen, dass PreAnalytiX GmbH (Switzerland) nicht zum Konzern zählt.

"**Group**" designates the Issuer and its respective consolidated Subsidiaries. For the avoidance of doubt, the Group does not include PreAnalytiX GmbH (Switzerland).

„**Tochtergesellschaft**" einer Person ist eine Kapital- oder Personengesellschaft, auf die diese Person unmittel- oder mittelbar einen beherrschenden Einfluss i.S.d. § 290 Abs. 2 HGB ausüben kann.

"**Subsidiary**" of an entity means any company, corporation or partnership over which the entity exercises a controlling influence either directly or indirectly within the meaning of section 290 para. 2 of the German Commercial Code (HGB).

„**Wesentliche Tochtergesellschaft**" ist jede Tochtergesellschaft der Emittentin,

(i) deren Umsatz mindestens 5% des Konzernumsatzes oder deren Bilanzsumme mindestens 5% der Konzernbilanzsumme beträgt, jeweils berechnet auf der Grundlage des letzten geprüften Konzernabschlusses; oder

"**Principal Subsidiary**" means any consolidated Subsidiary of the Issuer

(i) whose revenue is at least 5 per cent of the revenue of the Group or whose total assets amount to at least 5 per cent of the total assets of the Group, in each case calculated by reference to the latest audited accounts of the Group, or

(ii) auf die alle oder im Wesentlichen alle Vermögensgegenstände und Verbindlichkeiten einer Wesentlichen Tochtergesellschaft übertragen worden sind.

(ii) to which all or substantially all the assets and liabilities of another Principal Subsidiary are transferred.

„Wesentliche Nachteilige Änderung" bezeichnet jede wesentliche Verschlechterung in der finanziellen Lage der Emittentin oder des Konzerns als Ganzes, die eine wesentlich nachteilige Auswirkung auf die Fähigkeit der Emittentin, ihre Zahlungsverpflichtungen unter den Namensschuldverschreibungen zu erfüllen, hat oder mit hinreichender Wahrscheinlichkeit hat.

"**Material Adverse Change**" shall mean any substantial deterioration of the financial situation of the Issuer or the Group taken as a whole, which has or is reasonably likely to have a material adverse effect on the ability of the Issuer to fulfil its payment obligations under this Registered Note.

§ 2
(Rang, Negativverpflichtung, Verfügungen)

(1) *Rang.* Alle Verpflichtungen und Verbindlichkeiten der Emittentin aus den Namensschuldverschreibungen stehen jetzt und in Zukunft mit allen anderen jeweils ausstehenden gegenwärtigen und künftigen unbedingten, unbesicherten und nicht nachrangigen Mittelaufnahmen der Emittentin im gleichen Rang.

(2) *Negativverpflichtung der Emittentin.* Solange die Namensschuldverschreibungen ausstehen, jedoch nur bis zu dem Zeitpunkt, an dem alle Beträge an Kapital und Zinsen der Zahlstelle zur Verfügung gestellt worden sind, verpflichtet sich die Emittentin und stellt für ihre Wesentlichen Tochtergesellschaften sicher, dass weder sie noch eine ihrer Wesentlichen Tochtergesellschaften Grund- und Mobiliarpfandrechte oder andere dingliche Sicherungsrechte (die **"Sicher heiten"**) an ihren jeweiligen Vermögens gegenständen bestellt oder bestehen lässt, um (i) Finanzverbindlichkeiten oder (ii) Garantien oder Gewährleistungen in Bezug auf Finanzverbindlich keiten zu besichern, es sei denn, die Verbindlichkeiten der Emittentin aus diesem Namensschuldverschreibungen werden zur gleichen Zeit in gleicher Weise und gleichem Rang und anteilig besichert. Dies gilt nicht für Sicherheiten, die aufgrund zwingender gesetzlicher Vorschriften bestellt wurden oder zu bestellen sind. Erlaubte Sicherheiten sind von dieser Negativverpflichtung ausgenommen.

„Finanzverbindlichkeit“ bedeutet jegliche Verbindlichkeiten:

(a) aus der Aufnahme von Finanzierungsmitteln,

(b) aus der Mittelaufnahme aus einer Wechselkreditlinie oder einer beleglosen Entsprechung;

(c) aus der Mittelaufnahme aufgrund einer Ankaufsfazilität für Schuldscheine oder aus der Ausgabe von Bonds, Schuldscheinen, Schuldverschreibungen, Schuldtiteln oder ähnlichen Instrumenten;

§ 2
(Status, Negative Pledge, Disposals)

(1) *Status.* All the obligations and liabilities of the Issuer under the Registered Notes rank and will rank pari passu with all other present and future unconditional, unsecured and unsubordinated indebtedness of the Issuer from time to time outstanding.

(2) *Negative Pledge of the Issuer.* So long as any of the Registered Notes remains outstanding, but only until all amounts of principal and interest have been made available to the Paying Agent, the Issuer undertakes, and shall procure in respect of its Material Subsidiaries neither it nor any of its Principal Subsidiaries will, create or permit to subsist any mortgage, lien, charge, pledge or other in rem security interest (the **"Security"**) upon any of their respective assets, to secure (i) any Financial Indebtedness or (ii) any guarantee or indemnity in respect of any Financial Indebtedness unless, at the same time or prior thereto, the Issuer's obligations under the Registered Notes are equally and rateably secured, except for any Security created or to be created pursuant to mandatory law. Permitted Liens shall be excluded from this negative pledge.

“**Financial Indebtedness**” means any indebtedness for or in respect of:

(a) moneys borrowed;

(b) any amount raised by acceptance under any acceptance credit facility or dematerialized equivalent;

(c) any amount raised pursuant to any note purchase facility or the issue of bonds, notes, debentures, loan stock or any similar instrument;

(d) aus dem Betrag einer Verbindlichkeit hinsichtlich Leasing- oder Mietkaufverträgen, die nach den Grundsätzen ordnungsgemäßer Rechnungslegung (GAAP) als Finanzierungsleasing (finance oder capital lease) zu behandeln sind, mit Ausnahme derjenigen Verträge, die nach GAAP per Datum des vorliegenden Vertrags als Operating-Leasing behandelt würden;

(d) the amount of any liability in respect of any lease or hire purchase contract which would, in accordance with GAAP, be treated as a finance lease or capital lease other than any lease which, in accordance with GAAP as at the date of this Agreement, would have been treated as an operating lease;

(e) aus verkauften oder diskontierten Forderungen (soweit nicht ohne Rückgriffsrecht verkauft oder diskontiert);

(e) receivables sold or discounted (other than any receivables to the extent they are sold or discounted on a non-recourse basis);

(f) aus dem Kaufpreis von Vermögenswerten, soweit dieser vor oder nach dem Erwerb oder der Inbesitznahme seitens der haftenden Partei, zahlbar ist und dies in erster Linie zum Zweck der Aufnahme von Finanzmitteln vereinbart wurde, es sei denn, die Vorauszahlung oder der Zahlungsaufschub wurde über einen Zeitraum von höchstens 120 Tagen gewährt;

(f) acquisition costs of any asset to the extent payable before or after the time of acquisition or possession by the party liable where arranged primarily as a method of raising finance except where payment is advanced or deferred for not more than 120 calendar days;

(g) aus Derivategeschäften, welche zum Schutz vor Wertschwankungen oder zu deren Nutzung im Kontext der Zins- und Währungsabsicherung abgeschlossen wurden (wobei zur Bewertung des Derivategeschäfts nur der aktuelle Marktwert berücksichtigt wird);

(g) any derivative transaction entered into in connection with protection against or benefit from fluctuation in connection with interest or currency hedges (and, when calculating the value of any derivative transaction, only the marked to market value shall be taken into account);

(h) aus einer Rückhaftungsverpflichtung für eine Garantie, eine Schadloshaltung, ein Haftungsversprechen, ein Standby- oder Dokumentenakkreditiv oder sonstige von einer Bank oder einem Finanzinstitut für eine der unter den vorstehenden Buchstaben (a) bis (g) genannten Positionen ausgegebene Instrumente; und

(h) any counter-indemnity obligation in respect of a guarantee, indemnity, bond, standby or documentary letter of credit or any other instrument issued by a bank or financial institution in respect of any items referred to in paragraphs (a) to (g) above; and

(i) aus dem Betrag einer Verbindlichkeit hinsichtlich einer Garantie oder Schadloshaltung für eine der unter den vorstehenden Buchstaben (a) bis (h) genannten Positionen.

(i) the amount of any liability in respect of any guarantee or indemnity for any of the items referred to in paragraphs (a) to (h) above.

„**Erlaubte Sicherheiten**" bezeichnet folgende Sicherheiten:

"**Permitted Liens**" means any of the following encumbrances:

(i) Sicherheiten im Rahmen von Cash-Pooling-Vereinbarungen, die im normalen Geschäftsgang abgeschlossen werden;

(i) any Security arising under cash-pooling agreements entered into in the ordinary course of business;

(ii) Ver- oder Aufrechnungsvereinbarungen, die von einem Konzernmitglied im Rahmen der üblichen Bankgeschäfte zum Zweck der Verrechnung von Soll- und Habensalden eingegangen werden und Sicherheiten, die im ordentlichen Geschäftsgang im Rahmen der Allgemeinen Geschäftsbedingungen von Finanzinstituten, Banken oder Sparkassen begründet werden, bei denen ein Konzernmitglied seine Bankverbindung hat, (einschließlich, zur Klarheit sei dies gesagt, Sicherheiten im Rahmen der Allgemeinen Geschäfts bedingungen der Banken oder Sparkassen oder der niederländischen allgemeinen Geschäftsbedingungen von Banken (*Algemene bankvoorwaarden*));

(ii) any netting or set-off arrangement entered into by any member of the Group in the ordinary course of its banking arrangements for the purpose of netting debit and credit balances and any Security arising under the general terms and conditions of any financial institution, bank or Sparkasse with whom any member of the Group maintains a banking relationship in the ordinary course of business (including for the avoidance of doubt any Security arising under the *Allgemeine Geschäftsbedingungen der Banken oder Sparkassen* or the Dutch General Banking Conditions (*Algemene bankvoorwaarden*));

(iii) Sicherheiten, die im Rahmen des ordentlichen Geschäftsgangs durch gesetzliche Bestimmungen oder übliche Geschäftsbedingungen begründet werden;

(iii) any Security arising in the ordinary course of business by operation of law or on the basis of customary general business conditions;

(iv) Sicherheiten im Zusammenhang mit Vermögenswerten, die ein Konzernmitglied nach dem Ausgabetag dieser Namensschuldveschreibung erworben hat, oder mit Vermögenswerten von oder Anteilen an Personen, die ein Konzernmitglied nach dem Ausgabetag der Namensschuldverschreibungen erworben hat, falls:

(iv) any Security over or affecting any asset acquired by or any asset of or shares in any person acquired by a member of the Group after the Issue Date of this Registered Note if:

(A) die Sicherheit nicht im Hinblick auf den Kauf dieses Vermögenswertes durch ein Konzernmitglied begründet wurde; und

(A) the Security was not created in contemplation of the acquisition of that asset by a member of the Group; and

(B) der besicherte Kapitalbetrag nicht im Hinblick auf oder seit dem Kauf dieses Vermögenswertes durch ein Konzernmitglied erhöht wurde;

(B) the principal amount secured has not been increased in contemplation of or since the acquisition of that asset by a member of the Group;

(v) Sicherheiten unter Rahmenverträgen für Finanztermingeschäfte (jeweils einschließlich unter einen Credit Support Annex), die im normalen Geschäftsgang eines Mitgliedes des Konzerns abgeschlossen werden;

(v) any Security arising under framework master agreements on derivatives (including in each case without limitation any related credit support annexes) entered into in the ordinary course of business by any member of the Group;

(vi) Barsicherheiten, die als Tilgung einer unter dem jeweils bestehenden Konsortialkreditvertrag der Emittentin eingerichteten Abzweigline (*Ancillary Facility*) gewährt wurden;

(vi) any cash cover granted as repayment of an ancillary facility under the relevant existing syndicated loan agreement;

(vii) Barsicherheiten, die im Rahmen eines öffentlichen Übernahmeangebots für Aktien (oder andere aktiengebundene Wertpapiere) ausschließlich zum Zweck der Besicherung der Zahlungsverpflichtung gestellt wurden, (oder eine Bankgarantie für diese Zahlungsverpflichtung), in Fällen, in denen der Markt ein solches Verfahren in seinen jeweiligen Übernahmegesetzen fordert;

(vii) any cash cover created solely for the purpose of securing the payment obligation (or the bank guarantee for such payment obligation) under a public tender offer for shares (and other equity linked securities), in a market which requires such processin its respective take-over code;

(viii) Sicherheiten im Zusammenhang mit jeglicher Vereinbarung, bei der ein Konzernmitglied jegliche marktgängige Wertpapiere zu Bedingungen verkauft, die einen Rückkauf durch das Konzernmitglied innerhalb eines Zeitraums von bis zu sechs (6) Monaten

(viii) any Security created in connection with any arrangement by which a member of the Group disposes of any marketable securities on terms whereby they are or may be re-acquired by such member of the Group (a "**Repurchase Arrangement**") within a

(A) der Nennbetrag aller von der Rückkaufvereinbarung betroffenen Wertpapiere;

(A) the principal amount of all securities subject to Repurchase Arrangements;

(B) der ausstehende Nennbetrag aller verkauften Forderungen zu Asset-Backed-Securities-Transaktionen; und

(B) the outstanding principal amount of all receivables sold with respect to asset-backed securities transactions; and

(C) der Marktwert der Vermögenswerte aus Sale-and-lease-back-Transaktionen liegt insgesamt jederzeit bei maximal 10 % der Konzernbilanzsumme der Gruppe (berechnet durch Bezugnahme auf den letzten geprüften Konzernabschluss der Gruppe), wobei jede gemäß dieser Ziffer (viii) zulässigerweise bestellte Sicherheit auch dann zulässig bleibt, auch wenn die Grenze von 10 % der Konzernbilanzsumme aufgrund einer nachträglichen Verringerung der Konzernbilanzsumme nicht mehr eingehalten ist;

(C) the aggregate market value of assets subject to sale-and lease-back transactions shall, when aggregated, not exceed 10 per cent. of consolidated total assets of the Group (as calculated by reference to the most recent audited consolidated financial statements of the Group) at any time provided that, for the avoidance of doubt, any permitted Security created in reliance of this paragraph (viii) remains to be permitted although the amount referred to in this paragraph (viii) is no longer complied with due to a subsequent decrease in the Issuer's consolidated total assets after the date of the relevant Repurchase Arrangement or disposal;

(ix) Sicherheiten zur Besicherung von Finanzverbindlichkeiten, die einem anderen Mitglied des Konzerns geschuldet werden, um negative Steuereffekte für den Konzern oder ein Mitglied des Konzerns zu verhindern oder verringern;

(ix) any intra-group Security securing Financial Indebtedness to avoid or mitigate negative tax effects for the Group or a member thereof;

(x) Sicherheiten, die zur Erfüllung von § 8a Altersteilzeitgesetz oder § 7b oder 7e Sozialgesetzbuch IV bestehen oder begründet wurden;

(x) any Security existing or created in order to comply with Article 8a of the German Partial Retirement Act (*Altersteilzeitgesetz*) or Article 7b or 7e of the German Social Security Code IV (*Sozialgesetzbuch IV*);

(xi) Sicherheiten unter im gewöhnlichen Geschäftsverkehr begründeten (verlängerten) Eigentumsvorbehalten, Ratenkaufverträgen, Kaufverträgen unter Eigentumsvorbehalt (*conditional sale agreement*) oder Vereinbarungen, die einen vergleichbaren Effekt im Hinblick auf an ein Mitglied des Konzerns gelieferte Waren haben, und die aufgrund der Allgemeinen- oder Standardgeschäftsbedingungen des Lieferanten und nicht aufgrund eines Vertragsverstoßes eines Mitglieds des Konzerns entstehen;

(xi) any Security arising under any retention of title, hire purchase or conditional sale arrangement or arrangements having similar effect in respect of goods supplied to a member of the Group in the ordinary course of trading and on the supplier's standard or gernal terms of business and not arising as a result of any default or omission by any member of the Group;

(xii) Sicherheiten an Vermögensgegenständen, die von einer Wertpapierverwahrstelle oder einem Clearing House aufgrund der allgemeinen Geschäftsbedingungen bzw. Geschäftsabläufe der betreffenden Wertpapierverwahrstelle bzw. Clearing House im Rahmen des gewöhnlichen Geschäftsbetriebs entstehen oder bestellt werden; und

(xii) any Security created or subsisting over any asset held in any securities depositary or any clearing house pursuant to the standard terms of business and/or standard procedures of the relevant securities depositary or clearing house applicable in the normal course of trading; and

(xiii) Sicherheiten zur Besicherung von Finanzverbindlichkeiten, deren Kapitalbetrag (zusammen mit den Kapitalbeträgen aller Finanzverbindlichkeiten, für die ein Mitglied des Konzerns im Vertrauen auf dieses Ziffer (xiii) eine Sicherheit bestellt hat), zum Zeitpunkt der Bestellung der jeweiligen Sicherheit 10% der Konzernbilanzsumme (berechnet durch Bezugnahme auf den letzten geprüften Konzernabschluss des Konzerns) übersteigt, wobei jede gemäß dieser Ziffer zulässigerweise bestellte Sicherheit auch dann zulässig bleibt, auch wenn die Grenze von 10 % der Konzernbilanzsumme aufgrund einer nachträglichen Verringerung der Konzernbilanzsumme nicht mehr eingehalten ist.

(xiii) any Security securing indebtedness the principal amount of which (when aggregated with the principal amount of any other indebtedness which has the benefit of Security given by any member of the Group other than as permitted under paragraphs (i) to (x) above) does not, when aggregated, exceed 10 per cent. of consolidated total assets of the Group (as calculated by reference to the most recent audited consolidated financial statements of the Group) provided that, for the avoidance of doubt, any permitted Security created in reliance of this paragraph (xiii) remains to be permitted although the amount referred to in this paragraph (xiii) is no longer complied with due to a subsequent decrease in the Company's consolidated total assets.

(3) *Übertragung von Vermögensgegenständen*. Die Emittentin verpflichtet sich einzelne Gegenstände ihres Anlagevermögens nicht auf einen Dritten zu übertragen oder zu übereignen. Dies gilt nicht für Übertragungen und Übereignungen:

(3) *Disposal of assets*. The Issuer shall whether voluntary or involuntary, sell, lease, transfer or otherwise dispose of any asset belonging to its fixed assets. This does not apply to any sale, lease, transfer or other disposal:

(a) von Vermögenswerten im gewöhnlichen Geschäftsgang zu marktüblichen Konditionen;

(a) of assets made at arm’s length in the ordinary course of business;

(b) von Vermögenswerten eines Konzernmitglieds zu Gunsten eines anderen Konzernmitglieds;

(b) of any asset by a member of the Group to another member of the Group;

(c) von Forderungen im Rahmen von Asset-Backed Securities-Transaktionen, soweit der ausstehende Kapitalbetrag der von der Emittentin durchgeführten Transaktionen in keinem ihrer Geschäftsjahre insgesamt 15 % der Konzernbilanzsumme übersteigt;

(c) of receivables under asset backed securities transactions, where the aggregated outstanding principal amount of the Issuer's transactions does not exceed 15 per cent. of consolidated total assets in any of the Issuer's financial years;

(d) von Forderungen im Rahmen von marktüblichen Sale-and-Lease-back-Transaktionen, soweit der ausstehende Kapitalbetrag der von der Emittentin durchgeführten Transaktionen in keinem ihrer Geschäftsjahre insgesamt 15 % der Konzernbilanzsumme übersteigt;

(d) of receivables under sale and leaseback transactions under normal commercial terms where the aggregated outstanding principal amount of the Issuer's transactions does not exceed 15 per cent. of consolidated total assets in any of the Issuer's financial years;

(e) von eigenen Aktien der Emittentin, für die der Marktwert erhalten wurde oder im Kontext einer Aktienoption, eines Pensionsplans oder der Ausgabe von Belegschaftsaktien an Mitarbeiter und leitende Angestellte der Emittentin oder einer ihrer Tochtergesellschaften;

(e) of treasury shares of the Issuer for which fair value is received or in the context of stock option, pension plan or incentives programmes for employees and directors of the Issuer or any of its Subsidiaries;

(f) von Vermögensgegenständen im Austausch gegen gleichwertige oder höherwertige Vermögensgegenstände;

(f) of assets in exchange for other assets which are comparable or superior as to type, value and quality

(g) die mit vorheriger schriftlicher Zustimmung der Gläubiger erfolgen;

(g) made with the prior written consent of the Noteholders;

(h) überflüssigen Vermögensgegenständen oder Liquidationswerten;

(h) of obsolete or surplus assets;

(i) von Geld und sonstigen Finanzmitteln, soweit dies nicht aufgrund anderer Regelung in diesen Anleihebedingungen verboten ist;

(i) of money or cash for purposes not otherwise prohibited by these Conditions of Issue;

(j) aufgrund gesetzlicher und/oder behördlicher Vorgaben oder Anordnungen;

(j) required by law or any governmental authority or agency;

(k) im Rahmen einer Sicherheitenbestellung, die gemäß § 2 (2) (*Negativverpflichtung*) zulässig ist;

(k) constituting Security permitted under § 2 (2) (*Negative Pledge*);

(l) deren Erlös (abzüglich branchenüblicher Transaktionskosten) im Rahmen des Gesellschaftszwecks reinvestiert wird oder zur Rückzahlung von Finanzverbindlichkeiten verwendet wird oder als Liquidität in der Gruppe verbleibt; und

(l) where the proceeds of such transfers or conveys (less customary transaction costs) are reinvested for the corporate purpose or used for repayment of Financial Indebtedness or remains within the Group as liquid funds; and

(m) von Vermögenswerten, deren Buchwert (oder, im Falle einer Veräußerung von Anteilen an einem Konzernmitglied, deren relativer Wert in Prozent der Konzernbilanzsumme, wie im jeweils letzten konsolidierten Konzernabschluss der Emittentin ausgewiesen), addiert mit dem Buchwert aller sonstigen veräußerten Vermögenswerte im laufenden Geschäftsjahr der Emittentin und in den beiden vorausgehenden Geschäftsjahren der Emittentin (ausgenommen jeweils nach Absatz (a) bis (f) zulässige Veräußerungen), 30 % der konsolidierten Konzernbilanzsumme der Emittentin (berechnet durch Bezugnahme auf den letzten geprüften Konzernabschluss der Emittentin) zum Zeitpunkt der relevanten Übereignung oder Übertragung nicht

(m) of assets whose book value (or, in the case of a disposal of shares in a Group member, the value of the shares to be sold as a percentage of the consolidated group assets as shown in the Issuer's most recent consolidated financial accounts), when aggregated with the book value of all other assets disposed of during the actual financial year and the two preceding financial years of the Issuer (other than any of those permitted under paragraphs (a) to (f)) does not exceed 30 per cent of the Issuer's consolidated total assets (calculated by reference to the most recent audited consolidated financial accounts of the issuer) at the time of the respective disposal or transfer.

§ 3
(Verzinsung, Verzugszinsen)

(1) *Zinssatz.* Die Namensschuldverschreibungen werden ab dem 16. August 2022 (der „**Ausgabetag**") (einschließlich) bis zum Fälligkeitstag (ausschließlich) mit jährlich 3,04 % per annum (der „**Zinssatz**") verzinst.

(2) *Zinszahlungstage.* Die Zinsen sind jährlich nachträglich am 16. August eines jeden Jahres, erstmals am 16. August 2023, zu zahlen (jeweils ein „**Zinszahlungstag**"). Falls der Zinszahlungstag auf einen Tag fällt, der kein Geschäftstag ist, ist die Zahlung am unmittelbar darauf folgenden Geschäftstag zu leisten. Die Gläubiger sind nicht berechtigt, weitere Zinsen oder sonstige Zahlungen aufgrund dieser Verzögerung zu verlangen.

(3) *Zinstagequotient.* Zinsen für einen Zeitraum von weniger als einem vollen Jahr werden auf der Grundlage der tatsächlich verstrichenen Tage geteilt durch die Anzahl der Tage (365 bzw. 366) im jeweiligen Jahr berechnet.

(4) *Verzugszinsen.* Werden irgendwelche nach diesen Anleihebedingungen zahlbaren Beträge bei Fälligkeit nicht gezahlt, tritt unabhängig von einer Mahnung Verzug ein. In diesem Fall wird der fällige und nicht gezahlte Kapitalbetrag mit den gesetzlichen Verzugszinsen verzinst.* Des Weiteren wird die Emittentin allen Gläubigern jeden aufgrund eines Verzugs bezüglich einer Zinszahlung entstandenen Schaden ersetzen.

§ 3
(Interest, Default Interest)

(1) *Rate of Interest.* The Registered Notes bear interest from and including 16 August 2022 (the "**Issue Date**") to and excluding the Maturity Date at the rate of 3.04 % per annum (the "**Rate of Interest**").

(2) *Interest Payment Dates*. Interest shall be paid annually in arrear on 16 August of each year, the first interest payment being due on 16 August 2023 (each such date an "**Interest Payment Date**"). If any Interest Payment Date falls on a day which is not a Business Day, the relevant payment will be made on the immediately following Business Day. The Noteholders shall not be entitled to demand additional interest or any other payments in respect of such delay.

(3) *Day Count Fraction.* Interest for a period of less than one full year will be calculated on the basis of the actual number of days lapsed, divided by the number of days (365 or 366) in the respective year.

(4) *Default Interest*. A default shall occur, irrespective of any reminder, if any amounts payable under this Conditions of Issue are not paid when due. Any due and unpaid amount of principal shall bear interest at the statutory default interest rate.* Furthermore, the Issuer will indemnify each Noteholder for any damages resulting from the default in paying any interest amounts when due.

** Der gesetzliche Verzugszinssatz beträgt für das Jahr fünf Prozentpunkte über dem von der Deutschen Bundesbank von Zeit zu Zeit veröffentlichten Basiszinssatz, §§ 288 (1), 247 (1) BGB.*

§ 4
(Rückzahlung, Kontrollwechsel)

(1) *Rückzahlung bei Fälligkeit.* Die Namensschuldverschreibungen sind am 16. August 2035 (der „**Fälligkeitstag**") zum Fällt der Fälligkeitstag nicht auf einen Geschäftstag, so ist der nächstfolgende Geschäftstag der Fälligkeitstag. Die Gläubiger sind nicht berechtigt, Zinsen oder sonstige Zahlungen aufgrund dieser Verspätung zu verlangen.

(2) *Rückzahlung im Falle eines Kontrollwechsels.* Sofern ein Kontrollwechsel eingetreten ist, ist jeder Gläubiger berechtigt, die vom ihm gehaltenenen Namensschuldverschreibungen unter Einhaltung einer Kündigungsfrist von mindestens dreißig (30) Tagen durch schriftliche Mitteilung an die Emittentin (und Kopie an die Zahlstelle) (jeweils zum Vorzeitigen Rückzahlungsbetrag CoC zuzüglich bis zum vorzeitigen Rückzahlungstag aufgelaufener Zinsen) zu kündigen. Die Kündigung ist unwiderruflich und muss den vorzeitigen Rückzahlungstag ausweisen.

„**Kontrollwechsel**" bezeichnet den Fall, dass, ohne dass hierzu die vorherige Zustimmung der betreffenden Gläubiger eingeholt wurde,

** The annual default interest rate established by law is five percentage points above the base interest rate published by the German Central Bank (Deutsche Bundesbank) from time to time, §§ 288 (1), 247 (1) German Civil Code (BGB).*

§ 4
(Redemption, Change of Control)

(1) *Redemption at Maturity.* The Registered Notes shall be repayable at their nominal amount on 16 August 2035 (the "**Maturity** If the Maturity Date is not a Business Day, payment shall be made on the next succeeding Business Day. The Noteholders shall not be entitled to demand any interest or other payments on account of such delay.

(2) *Redemption in case of Change of Control.* In the event a Change of Control has occurred, each Noteholder shall be entitled to terminate the respective aggregate amount in the Registered Notes held by it upon giving not less than thirty (30) days' notice in writing to the Issuer (copy to the Paying Agent) at the Early Redemption Amount CoC together with interest accrued to the date fixed for prepayment. Such notice will be irrevocable and must specify the date fixed for prepayment.

"**Change of Control**" means that, without the prior consent of the Noteholders,

(a) nach dem Ausgabetag (i) eine Person (mit Ausnahme von Stichting Preferente Aandelen Qiagen) mindestens 50% der Stimmrechte an der Emittentin hält (einschließlich der Stimmrechte, die die Person gemäß nachstehendem Punkt (b) erhält), oder

(ii) sich die Gegenstandsklausel der Satzung (*doelomschrijving*) von Stichting Preferente Aandelen Qiagen wesentlich gegenüber dem derzeitigen Wortlaut ändert, sofern zu diesem Zeitpunkt Stichting Preferente Aandelen Qiagen mindestens 50 % der Stimmrechte an der Emittentin hält (einschließlich der Stimmrechte, die diese Person gemäß nachstehendem Punkt (b) erhält),

(b) für die Zwecke von obigem Punkt (a) gilt, dass eine Person 50 % der Stimmrechte an der Emittentin hält, wenn sie oder eine oder mehrere ihrer Tochtergesellschaften - unabhängig davon, ob gemäß einem Vertrag mit anderen Stimmberechtigten (*stemgerechtigden*) oder anderweitig - allein oder gemeinsam mehr als 50 % der Stimmrechte in der Hauptversammlung (*algemene vergadering*) der Emittentin ausüben können.

„**Vorzeitiger Rückzahlungsbetrag CoC**" bezeichnet den Nennbetrag.

§ 5
(Steuern, vorzeitige Rückzahlung aus Steuergründen)

(a) if at any time after the Issue Date (i) a person (other than Stichting Preferente Aandelen Qiagen) holds at least 50 per cent. of the voting rights in the Issuer (including voting rights attributed to such person pursuant to paragraph (b) below), or

(ii) the description in the objects clause in the articles (*doelomschrijving*) of Stichting Preferente Aandelen Qiagen is materially changed from the description as at the date hereof, if at that time Stichting Preferente Aandelen Qiagen holds at least 50 per cent. of the voting rights in the Issuer (including voting rights attributed to such person pursuant to paragraph (b) below),

(b) For the purpose of paragraph (a) above, a person shall be deemed to hold 50 per cent. of the voting rights in the Issuer if that person, or one or more of its Subsidiaries, whether or not pursuant to an agreement with other persons entitled to vote (*stemgerechtigden*) can, alone or together, exercise more than 50 per cent. of the voting rights in the general meeting of shareholders (*algemene vergadering*) of the Issuer.

"**Early Redemption Amount CoC** " means the nominal amount.

§ 5
(Taxes, early Redemption for taxation reasons)

(1) *Quellensteuern.* Sämtliche in Bezug auf die Namensschuldverschreibungen zu zahlenden Beträge sind ohne Einbehalt oder Abzug gegenwärtiger oder zukünftiger Steuern, Abgaben oder amtlicher Gebühren gleich welcher Art zu leisten, die von oder in der Relevanten Steuerjurisdiktion oder für deren Rechnung oder von oder für Rechnung einer dort zur Steuererhebung ermächtigten Gebietskörperschaft oder Behörde gegenüber der Emittentin an der Quelle auferlegt, erhoben oder eingezogen werden („**Quellensteuern**"), es sei denn, dieser Einbehalt oder Abzug ist gesetzlich vorgeschrieben. In diesem letzteren Fall wird die Emittentin diejenigen zusätzlichen Beträge an Kapital und Zinsen (die „**Zusätzlichen Beträge**") zahlen, die erforderlich sind, damit die den Gläubigern zufließenden Nettobeträge nach diesem Einbehalt oder Abzug jeweils den Beträgen entsprechen, die ohne einen solchen Einbehalt oder Abzug von den Gläubigern empfangen worden wären. Solche Zusätzlichen Beträge sind jedoch nicht zahlbar im Hinblick auf Steuern und Abgaben, die:

(a) von einer als Depotbank oder Inkassobeauftragter des Gläubigers handelnden Person oder sonst auf andere Weise zu entrichten sind als dadurch, dass die Emittentin von den von ihr zu leistenden Zahlungen von Kapital oder Zinsen einen Abzug oder Einbehalt vornimmt; oder

(b) wegen einer gegenwärtigen oder früheren persönlichen oder geschäftlichen Beziehung des Gläubigers zu der Relevanten Steuerjurisdiktion zu zahlen sind, und nicht allein deshalb, weil Zahlungen auf die Namensschuldverschreibungen aus Quellen in der Relevanten Steuerjurisdiktion stammen (oder für Zwecke der Besteuerung so behandelt werden) oder dort besichert sind; oder

(1) *Withholding Tax.* All amounts payable in respect of the Registered Notes shall be made without withholding or deduction for or on account of any present or future taxes, duties or governmental charges of whatever nature imposed, levied or collected with respect to the Issuer at the source in or on behalf of the Relevant Tax Jurisdiction or by or on behalf of any political subdivision or any authority therein having power to tax ("**Withholding Taxes**"), unless such withholding or deduction is required by law. In such latter event, the Issuer shall pay such additional amounts of principal and interest (the "**Additional Amounts**") as shall be necessary in order that the net amounts received by the Noteholders, after such withholding or deduction shall equal the respective amounts which would otherwise have been receivable in the absence of such withholding or deduction. No such Additional Amounts shall be payable on account of any taxes or duties which:

(a) are payable by any person acting as custodian bank or collecting agent on behalf of a Noteholder, or otherwise in any manner which does not constitute a deduction or withholding by the Issuer from payments of principal or interest made by it, or

(b) are payable by reason of the Noteholder having, or having had, some personal or business connection with the Relevant Tax Jurisdiction and not merely by reason of the fact that payments in respect of the Registered Notes are, or for purposes of taxation are deemed to be, derived from sources in, or are secured in, the Relevant Tax Jurisdiction, or

(c) aufgrund (i) einer Richtlinie oder Verordnung der Europäischen Union betreffend die Besteuerung von Zinserträgen oder (ii) einer zwischenstaatlichen Vereinbarung über deren Besteuerung, an der die Relevante Steuerjurisdiktion oder die Europäische Union beteiligt ist, oder (iii) einer gesetzlichen Vorschrift, die diese Richtlinie, Verordnung oder Vereinbarung umsetzt oder befolgt, abzuziehen oder einzubehalten sind; oder

(c) are deducted or withheld pursuant to (i) any European Union Directive or Regulation concerning the taxation of interest income, or (ii) any international treaty or understanding relating to such taxation and to which the Relevant Tax Jurisdiction or the European Union is a party, or (iii) any provision of law implementing, or complying with, or introduced to conform with, such Directive, Regulation, treaty or understanding, or

(d) von einer Zahlstelle einbehalten oder abgezogen werden, wenn die Zahlung von einer anderen Zahlstelle ohne den Einbehalt oder Abzug hätte vorgenommen werden können; oder

(d) are deducted or withheld by a paying agent and such deduction or withholding could be avoided if payments could be made by another paying agent without such deduction or withholding, or

(e) wegen einer Rechtsänderung zu zahlen sind, welche später als 30 Tage nach Fälligkeit der betreffenden Zahlung oder, wenn dies später erfolgt, ordnungsgemäßer Bereitstellung aller fälligen Beträge und einer diesbezüglichen Bekanntmachung gemäß § 13 wirksam wird.

(e) are payable by reason of a change in law that becomes effective more than 30 days after the relevant payment becomes due, or is duly provided for and notice thereof is published in accordance with § 13, whichever occurs later.

„**Relevante Steuerjurisdiktion**" bezeichnet die Niederlande.

„**Relevant Tax Jurisdiction**" means The Netherlands.

(2) *FATCA*. Die Emittentin ist nicht verpflichtet, zusätzliche Beträge in Bezug auf einen Einbehalt oder Abzug von Beträgen zu zahlen, die gemäß Sections 1471 bis 1474 des U.S. Internal Revenue Code (in der jeweils geltenden Fassung oder gemäß Nachfolgebestimmungen), gemäß zwischenstaatlicher Abkommen, gemäß den in einer anderen Rechtsordnung in Zusammenhang mit diesen Bestimmungen erlassenen Durchführungsvorschriften oder gemäß mit dem U.S. Internal Revenue Service geschlossenen Verträgen von der Emittentin, der Zahlstelle oder einem anderen Beteiligten abgezogen oder einbehalten wurden ("**FATCA-Steuerabzug**") oder Gläubiger in Bezug auf einen FATCA-Steuerabzug schadlos zu halten.

(2) *FATCA*. In any event, the Issuer will not have any obligation to pay Additional Amounts deducted or withheld by the Issuer, the Paying Agent or any other party in relation to any withholding or deduction of any amounts required by the rules of U.S. Internal Revenue Code Sections 1471 through 1474 (or any amended or successor provisions), pursuant to any inter-governmental agreement, or implementing legislation adopted by another jurisdiction in connection with these provisions, or pursuant to any agreement with the U.S. Internal Revenue Service ("**FATCA Withholding**"), or to indemnify any Noteholder in relation to any FATCA Withholding.

(3) *Benachrichtigung.* Die Emittentin wird die Zahlstelle unverzüglich benachrichtigen, wenn sie zu irgendeiner Zeit gesetzlich verpflichtet ist, von aufgrund dieser Anleihebedingungen fälligen

(3) *Notification.* The Issuer shall promptly notify the Paying Agent if it is legally obliged at any time to deduct or withhold any amounts from payments due under these Conditions of Issue

(4) *Kündigungsrecht.* Falls infolge einer am oder nach dem Tag der Ausgabe dieser Namensschuldverschreibung wirksam werdenden Änderung oder Ergänzung der in der Relevanten Steuerjurisdiktion geltenden Rechtsvorschriften oder einer vor diesem Zeitpunkt nicht allgemein bekannten Anwendung oder amtlichen Auslegung solcher Rechtsvorschriften Quellensteuern auf die Zahlung von Kapital oder Zinsen nach diesen Anleihebedingungen anfallen oder anfallen werden und die Quellensteuern, sei es wegen der Verpflichtung zur Zahlung zusätzlicher Beträge gemäß Absatz (1) oder aus sonstigen Gründen, der Emittentin zur Last fallen, ist die Emittentin berechtigt, die gesamten Namensschuldverschreibungen des betreffenden Gläubigers (aber nicht nur einzelne davon) unter Einhaltung einer Kündigungsfrist von mindestens 30 Tagen jederzeit (dem „**Vorzeitigen Rückzahlungstag**") zum Vorzeitigen Rückzahlungsbetrag zuzüglich bis zum Vorzeitigen Rückzahlungstag (ausschließlich) aufgelaufener Zinsen zurückzuzahlen. Eine solche Rückzahlung darf jedoch nicht früher als 90 Tage vor dem Zeitpunkt erfolgen, an dem die Emittentin erstmals Quellensteuern einbehalten oder zahlen müsste, falls eine Zahlung in Bezug auf diese Anleihebedingungen dann geleistet würde.

„**Vorzeitiger Rückzahlungsbetrag**" bezeichnet den Nennbetrag.

(5) *Form der Kündigung.* Die Benachrichtigung über eine vorzeitige Rückzahlung gemäß Absatz (4) erfolgt schriftlich gegenüber der Zahlstelle mit gleichzeitiger Wirkung für alle betroffenen Gläubiger. Sie ist unwiderruflich und muss den Rückzahlungstermin sowie in zusammenfassender Form die Tatsachen angeben, die das Kündigungsrecht begründen. Die Zahlstelle wird die Zessionare, von denen sie zu dem Zeitpunkt Kenntnis hat, über eine solche Bekanntmachung einer vorzeitigen Rückzahlung unverzüglich unterrichten.

Zur Klarstellung: die Abgeltungssteuer und die Zinsertragssteuer sind keine Quellensteuern im Sinne der obigen Bestimmung.

(4) *Termination Right.* If, as a result of any change in or amendment to the laws or regulations prevailing in the Relevant Tax Jurisdiction, which change or amendment becomes effective on or after the date of the Issue of the Registered Notes, or as a result of any application or official interpretation of such laws or regulations not generally known before that date, Withholding Taxes are or will be leviable on payments of principal or interest subject to these Conditions of Issue and, by reason of the obligation to pay Additional Amounts as provided in subparagraph (1) or otherwise, such Withholding Taxes are to be borne by the Issuer, the Issuer may prepay all Registered Notes of the relevant Noteholder (but not some only) at any time, by giving not less than 30 days' notice (the "**Early Redemption Date**") at the Early Redemption Amount together with interest accrued to but excluding the Early Redemption Date, provided that no such prepayment shall be made earlier than 90 days prior to the earliest date on which the Issuer would be obliged to withhold or pay Withholding Taxes were a payment in respect of this Conditions of Issue then made.

"**Early Redemption Amount**" means the nominal amount.

(5) *Form of Prepayment Notice.* Any such notice of prepayment referred to in subparagraph (4) shall be given in writing and shall be addressed to the Paying Agent with simultaneous effect for all concerned Noteholders. It shall be irrevocable, must specify the date fixed for prepayment and must set forth a statement in summary form of the facts constituting the basis for the termination right. The Paying Agent undertakes promptly to inform the Assignees as for the time being have been notified to it about such notice of prepayment

For the avoidance of doubt: the German flat rate interest tax (Abgeltungssteuer and Zinsertragssteuer) do not constitute withholding taxes within the meaning of the above provision.

§ 6
(Außerordentliche Kündigung)

(1) *Kündigungsgründe.* Jeder Gläubiger ist berechtigt, seine Namensschuldverschreibung aus wichtigem Grund zu kündigen und deren sofortige Rückzahlung zu ihrem Nennbetrag zuzüglich etwaiger bis zum Tage der Rückzahlung aufgelaufener Zinsen zu verlangen. Ein wichtiger Grund liegt insbesondere in den folgenden Fällen vor:

(a) *Nichtzahlung*. Die Emittentin zahlt Kapital oder Zinsen nicht innerhalb von 5 Geschäftstagen nach dem betreffenden Fälligkeitstag; oder

(b) *Verletzung einer sonstigen Verpflichtung*. Die Emittentin erfüllt irgendeine andere wesentliche Verpflichtung aus den Namensschuldverschreibungen nicht ordnungsgemäß und die Erfüllung ist entweder nicht nachholbar oder wird nicht innerhalb von 15 Geschäftstagen nachdem die Emittentin eine schriftliche Benachrichtigung hierüber eines Gläubigers entsprechend § 13 erhalten hat nachgeholt; oder

(c) *Drittverzugsklausel.* (i) Finanzverbindlichkeiten der Emittentin und/ oder einer ihrer Wesentlichen Tochtergesellschaften über insgesamt mehr als USD 30 Mio. werden bei Fälligkeit oder nach Ablauf einer in den Bedingungen des betreffenden Instruments dieser Finanzverbindlichkeiten enthaltenen Nachfrist nicht gezahlt, oder (ii) eine Finanzverbindlichkeit der Emittentin oder einer ihrer Wesentlichen Tochtergesellschaften, deren Gesamtbetrag USD 30 Mio. überschreitet, wird vorzeitig fällig gestellt oder auf andere Weise vor ihrer eigentlich bestimmten Fälligkeit auf Grund eines wie auch immer bezeichneten Kündigungsgrundes vorzeitig fällig, oder

§ 6
(Events of Default)

(1) *Events of Default.* Each Noteholder shall be entitled to terminate his Registered Notes with good cause and demand immediate redemption thereof at its principal amount together with accrued interest (if any) to the date of repayment. Such good cause shall in particular be constituted by any of the following:

(a) *Non-Payment*. The Issuer fails to pay principal or interest within 5 Business Days from the relevant due date; or

(b) *Breach of other Obligation*. The Issuer fails to duly perform any other material obligation arising from the Registered Notes and such failure is either not capable of remedy or is not remedied within 15 Business Days after the Issuer has received a notice thereof from a Noteholder in accordance with § 13; or

(c) *Cross-Default*. (i) Financial Indebtedness of the Issuer and/or of any of its Principal Subsidiaries, the aggregate amount of which exceeds USD 30 million, is not paid when due or after the end of any grace period contained in the terms of the relevant Financial Indebtedness instrument, or (ii) any Financial Indebtedness of the Issuer or of any of its Principal Subsidiaries, the aggregate amount of which exceeds USD 30 million, is declared or otherwise becomes due and payable prior to its specified maturity as a result of an event of default (however described); or

(d) *Zahlungseinstellung*. die Emittentin oder eine ihrer Wesentlichen Tochtergesellschaften ist zahlungsunfähig oder räumt ein, zahlungsunfähig zu sein, stellt ihre Zahlungen für Verbindlichkeiten ein oder beginnt aufgrund von tatsächlichen oder erwarteten finanziellen Schwierigkeiten Verhandlungen mit einem oder mehreren ihrer Gläubiger im Hinblick auf eine generelle Neuordnung oder Umschuldung ihrer Verbindlichkeiten oder schließt eine Abtretung oder einen Vergleich zugunsten ihrer Gläubiger ab, oder

(d) *Payment Moratorium.* the Issuer or any of its Principal Subsidiaries is unable or admits its inability to pay its debts as they fall due, suspends making payments on its debts or, by reason of actual or anticipated financial difficulties, commences negotiations with one or more of its creditors with a view to the general readjustment or rescheduling of its indebtedness or makes an assignment for the benefit of or a composition with its creditors; or

(e) *Insolvenz.* ein zuständiges Gericht eröffnet ein Insolvenzverfahren über das Vermögen der Emittentin oder einer Wesentlichen Tochtergesellschaft, leitet ein solches Verfahren ein und dieses wird nicht innerhalb von sechzig (60) Tagen aufgehoben oder ausgesetzt oder die Emittentin oder die Wesentliche Tochtergesellschaft beantragt die Eröffnung eines solchen Verfahrens oder leitet dies ein, oder

(e) *Insolvency.* a competent court opens insolvency proceedings against the Issuer's or a Principal Subsidiaries' assets, such proceedings are instituted but not discharged or stayed within sixty (60) days, or the Issuer or the Principal Subsidiary applies for or institutes such proceedings; or

(f) *Einstellung der Geschäftstätigkeit.* die Emittentin oder eine ihrer Wesentlichen Tochtergesellschaften stellt ihre Geschäftstätigkeit ganz oder im Wesentlichen ein, sofern diese nicht auf eine andere Tochtergesellschaft der Emittentin übertragen wird, oder

(f) *Cessation of Business.* the Issuer or any Principal Subsidiary ceases its business operations in whole or in material parts thereof unless such business is transferred to another Subsidiary of the Issuer; or

(g) *Liquidation.* die Emittentin oder eine Wesentliche Tochtergesellschaft tritt in Liquidation, es sei denn, es handelt sich um eine freiwillige Liquidation, oder

(g) *Liquidation.* the Issuer or a Principal Subsidiary goes into liquidation other than a voluntary liquidation; or

(h) *Zwangsvollstreckungsmaßnahmen.* Zwangsvollstreckungsmaßnahmen in das Vermögen der Emittentin oder einer Wesentlichen Tochtergesellschaft, sofern der Wert der Forderungen, wegen der die Zwangsvollstreckung betrieben wird, insgesamt mindestens USD 5.000.000,- (oder entsprechendem Gegenwert in einer anderen Währung) beträgt und diese nicht binnen zwanzig (20) Bankarbeitstagen aufgehoben oder in Treu und Glauben angefochten werden, oder

(h) *Security measures.* Enforcement measures are initiated against the Borrower or any other member of the Group, provided that such measures are in respect of indebtedness aggregating more than USD 5.000.000,- (or the equivalent in another currency) and are not discharged within 20 Business Days; or

(i) *Verschmelzung*. eine Verschmelzung der Emittentin auf einen anderen Rechtsträger oder eine Übertragung sämtlicher oder im Wesentlichen sämtlicher Vermögenswerte auf einen anderen Rechtsträger findet statt, es sei denn, dass (i) dieser andere Rechtsträger, ein Unternehmen mit Sitz in einem Mitgliedstaat der Europäischen Union oder im Vereinigten Königreich, der Schweiz oder den Vereinigten Staaten von Amerika ist, welches aufgrund einer Vereinbarung oder kraft Gesetz sämtliche Verpflichtungen der Emittentin aus diesen Namensschuldverschreibungen übernommen hat, und (ii) die wirtschaftliche oder finanzielle Lage dieses anderen Rechtsträgers nicht schlechter ist, als die der Emittentin zum Zeitpunkt des Eintritts dieses Ereignisses, oder

(i) *Merger.* the Issuer is merged into another entity or all or substantially all of its assets are conveyed or transferred to another entity, unless (i) the entity is a corporation domiciled in a member state of the European Union, the United Kingdom, Switzerland or the United States of America which assumes all obligations of the Issuer under these Registered Notes either by an agreement or by operation of law, and (ii) the economic and financial situation of such entity is not less sound than that of the Issuer at the time of the occurrence of such event; or

(j) *Wesentliche Nachteilige Änderung*. eine Wesentliche Nachteilige Änderung ist eingetreten.

(j) *Material Adverse Change.* a Material Adverse Change has occurred.

(2) Form der Kündigung. Kündigungen müssen schriftlich erfolgen und sind der Emittentin über die Zahlstelle zuzuleiten.

(2) Form of Termination Notice. Any notice of termination must be made in writing and sent to the Issuer through the Paying Agent.

(3) *Vorfälligkeitsentschädigung*. Falls die Namensschuldverschreibungen aus einem der in Absatz (1) genannten Gründe ganz oder teilweise vorzeitig zurückgezahlt werden, wird die Emittentin den betreffenden Gläubigern denjenigen Schaden (einschließlich angemessener Kosten und Auslagen und einschließlich des Schadens aus etwaigen Verlusten bei einer Wiederanlage (**„Reinvestitionsschaden“**) ersetzen, der den betreffenden Gläubigern aus der vorzeitigen Rückzahlung entsteht. Die Emittentin wird die Vorfälligkeitsentschädigung auf der Basis einer vom betreffenden Gläubiger erstellten Berechnung und Dokumentation zahlen.

„Reinvestitionsschaden“ bezeichnet im Falle einer positiven Zahl, die Summe der am Bestimmungstag für den vorzeitigen Rückzahlungstag berechneten Barwerte des Überschusses von (i) den Zinsen, die auf die

(3) *Prepayment Compensation*. If the Registered Notes are prepaid in whole or in part for any of the reasons referred to in subparagraph (1), the Issuer shall indemnify the relevant Noteholders for the damage (including all reasonable costs and expenses and the losses from any refinancing (**“Reinvestment Loss”**) incurred by them as a result of such prepayment. The Issuer will pay the damage following receipt of a calculation and documentation received from the Nrespective Noteholder.

“Reinvestment Loss” means in case such figure is positive, the sum of the present values, calculated on the Determination Date for the early redemption date, of the excess of (i) the amounts of interest that would have been

„**Bestimmungstag**“ bezeichnet den fünften Geschäftstag vor dem Vorzeitigen Rückzahlungstag.

“**Determination Date**” means the fifth Business Day prior to the Early Redemption Date.

„**B**“ bezeichnet die durchschnittliche Rendite der im Sekundärmarkt gehandelten Anleihen der Bundesrepublik Deutschland mit einer Restlaufzeit, die dem Zeitraum zwischen vorzeitiger Rückzahlung der Namensschuldverschreibungen und der vorgesehenen Fälligkeit vergleichbar ist, interpoliert wenn nötig.

“**B**” means the average yield of bonds issued by the Federal Republic of Germany traded in the secondary markets and having a remaining lifetime comparable to the period from the prepayment date of the Registered Notes to its scheduled maturity date, interpolated if necessary.

§ 7 (Zahlungen)

§ 7 (Payments)

(1) *Zahlung*. Die Emittentin wird sämtliche unter diesen Anleihebedingungen fälligen Beträge gemäß den Bestimmungen der separat abgeschlossenen Zahlstellenvereinbarung auf einem Konto der Zahlstelle anschaffen. Aus den derart zur Verfügung gestellten Mitteln wird die Zahlstelle Kapital und Zinsen sowie etwa sonst fällige Beträge an die ordnungsgemäß im Register eingetragenen Gläubiger nach Vorlage der Urkunde zahlen.

(1) *Payments.* The Issuer shall make available all amounts due under these Conditions of Issue in an account of the Paying Agent as specified in the separately agreed paying agency agreement. From the funds so provided, the Paying Agent shall pay against presentation of the Certificate principal and interest, as well as any further amounts due, to the Noteholders duly registered in the Register.

(2) *Erfüllung.* Ungeachtet der Tatsache, dass alle Zahlungen während der gesamten Laufzeit der Namensschuldverschreibungen ausschließlich über die Zahlstelle erfolgen, befreit, wenn und soweit der Emittentin die Abtretung an einen Zessionar mindestens 10 Geschäftstage vor dem betreffenden Zahlungstermin angezeigt wird, erst die Zahlung der fälligen Beträge an diesen Zessionar oder eine von ihm bezeichnete Bank oder andere Institution die Emittentin von ihren jeweiligen Verpflichtungen.

(2) *Discharge of Obligations.* Regardless of the fact that all payments during the full term of the Registered Notes shall be effected exclusively through the Paying Agent, only the payment to the relevant assignee or to a bank or other institution designated by such assignee shall release the Issuer from its respective obligations, if and to the extent that the Issuer has received notification of the assignment to such assignee at least 10 Business Days before the relevant payment date.

(3) *Anrechnung.* Zahlungen der Emittentin werden in der in § 367 (1) BGB vorgesehenen Reihenfolge auf die fälligen Beträge angerechnet (zunächst auf die Kosten, dann auf Zinsen und zuletzt auf das Kapital). Sollten im Fall von Teilabtretungen die Zahlungen der Emittentin nicht ausreichen, um einen bestimmten fälligen Betrag vollständig zu tilgen, werden die Zahlungen der Emittentin pro rata auf die Gläubiger verteilt.

(3) *Application of Payments*. Payments by the Issuer shall be applied in the sequence provided for in § 367 (1) of the German Civil Code (BGB) to the amounts falling due (first to the costs, then to interest and finally to the principal). If, in the event of partial assignments, the payments by the Issuer are not sufficient to fully redeem any given amount due, the payments of the Issuer shall be distributed among the Noteholders on a pro rata basis.

(4) *Abtretungen ohne Stückzinsen*. Im Fall von Zinszahlungen und soweit während einer Zinsperiode eine oder mehrere Abtretungen erfolgt sind und keine übereinstimmende Mitteilung aller Gläubiger an die Zahlstelle erfolgt, dass die Abtretungen gegen Zahlung von Stückzinsen erfolgt sind, erfolgt die Auszahlung des gesamten von der Emittentin unter Absatz (1) erhaltenen Zinsbetrags durch die Zahlstelle zeitanteilig an die Gläubiger unter Berücksichtigung der Zeiträume während einer Zinsperiode, während der ein betreffender Gläubiger Berechtigter unter den Namensschuldverschreibungen war.

(4) *Assignments without Accrued Interest*. In the event of interest payments and if assignments were effected during an interest period and if the Paying Agent has not received a notice from all Noteholders that the assignments were made against payment of accrued interest, the Paying Agent will pay any amounts received from the Issuer on account of interest pursuant to subparagraph (1) above pro rata temporis to the relevant Noteholders giving effect to the actual period during which any Noteholders were entitled under the Registered Notes.

§ 8
(Gegenforderungen)

§ 8
(Counterclaims)

Die Emittentin kann gegenüber Forderungen eines Gläubigers nur aufrechnen, wenn die Forderungen gegen den betreffenden Gläubiger unbestritten oder rechtskräftig festgestellt sind. Solange und soweit Namensschuldverschreibungen (i) an ein Versicherungsunternehmen abgetreten wurden und zum Sicherungsvermögen im Sinne von § 125 Versicherungsaufsichtsgesetz gehören oder (ii) an eine Bank abgetreten wurden und zu einer aufgrund inländischer gesetzlicher Vorschriften gebildeten Deckungsmasse einer Bank gehören oder (iii) an ein deutsches Versorgungswerk abgetreten wurden, verzichtet die Emittentin im Hinblick auf Forderungen im Zusammenhang mit den Namensschuldverschreibungen, auch im Falle der Insolvenz, auf jede Aufrechnung sowie die Ausübung von Pfandrechten, Zurückbehaltungsrechten und sonstigen Rechten, durch welche die Forderungen der Gläubiger aus den Namensschuldverschreibungen beeinträchtigt werden können.

The Issuer shall only be entitled to set off claims of any Noteholder where the claims against such Noteholder are unchallenged or have been recognized by a final judgement. To the extent that the Registered Notes is assigned to (i) an insurance company and belong to the committed assets (*Sicherungsvermögen*) in accordance with § 125 of the German Insurance Supervisory Act (*Versicherungsaufsichtsgesetz*) or (ii) to a bank and belong to the committed assets of a bank under any domestic covered bond legislation or (iii) to a German professional pension fund (*Versorgungswerk*), the Issuer waives any right of set-off against the claims under the Registered Note; also in the event of any insolvency, as well as the exercise of any right of pledge, right of retention or other rights which could adversely affect the claims under the Registered Notes.

§ 9
(Abtretungen)

§ 9
(Assignments)

(1) *Abtretung*. Jeder Gläubiger ist berechtigt, die Namensschuldverschreibungen ohne Zustimmung der Emittentin an einen Zulässigen Zessionar und mit Zustimmung der Emittentin an jede sonstige Person (jeweils ein „**Zessionar**") abzutreten. Die Abtretung kann nur in Beträgen von EUR 1.000.000 oder höheren Beträgen erfolgen.

„**Zulässiger Zessionar**" bezeichnet:

(i) Kreditinstitute, private und öffentlich-rechtliche Versicherungsunternehmen, Kapitalanlagegesellschaften, Investmentaktiengesellschaften sowie Investmentgesellschaften und von diesen beauftragte Verwaltungsgesellschaften, Pensionsfonds und ihre Verwaltungsgesellschaften; die vorstehend genannten Personen müssen jeweils einer staatlichen Finanzaufsicht, Bankaufsicht oder Versicherungsaufsicht unterliegen; sowie

(ii) Zentralbanken, internationale und supranationale Institutionen wie die Europäische Zentralbank, die Europäische Investitionsbank, andere vergleichbare internationale Organisationen und die KfW oder berufsständische Versorgungswerke (einschließlich kirchlicher Versorgungswerke);

wobei alle unter (i) und (ii) genannten Personen jeweils in einem Mitgliedsstaat des Europäischen Wirtschaftsraums, dem vereinigten Königsreich oder der Schweiz ansässig sein müssen.

(2) *Form der Abtretung.* Jede Abtretung bedarf der Schriftform und hat im Wesentlichen dem diesen Anleihebedingungen als Anhang 1 beigefügtem Muster einer Abtretungsvereinbarung zu entsprechen. Den Zessionaren stehen, sofern in diesen Anleihebedingungen nichts anders bestimmt ist, die gleichen Rechte und Ansprüche zu, die sich für den Ursprünglichen Gläubiger aus den Namensschuldverschreibungen ergeben, einschließlich von Kündigungsrechten. Die Anzeige der Abtretung gegenüber der Emittentin im Sinne von § 409 BGB erfolgt durch

(1) *Assignment.* Each Noteholder may transfer the Registered Notes by assignment without prior consent of the Issuer to a Permitted Assignee and with prior consent of the Issuer to each other person (each an "**Assignee**"). Assignments can only be made in an amount of EUR 1,000,000 or higher amounts.

"**Permitted Assignee**" means:

(i) Credit institutions, insurance undertakings under private or public law, mutual funds, investment stock companies and investment companies and administrators assigned by them, pension funds and their administrators; the aforementioned persons have to be subject to comprehensive public financial, banking or insurance supervision; as well as

(ii) Central banks, international and supranational institutions such as the European Central Bank, the European Investment Bank, other comparable international organisations and the KfW or professional pension funds (including church pension funds);

whereas all institutions mentioned under (i) and (ii) above must be based or having their registered office in a member state of the European Economic Area, the United Kingdom or Switzerland.

(2) *Form of Assignment.* Any assignment must be made in writing and should substantially be in accordance with the form of assignment agreement attached hereto as Annex 1. The assignees shall have the same rights and titles under the Registered Notes as the Initial Noteholder, except as otherwise stated herein, including any early redemption rights. The notification of the assignment to the Issuer under § 409 of the German Civil Code (BGB) shall be made by submitting the executed assignment agreement to the Paying Agent appointed by the Issuer. The requirements for an assignment

§ 10
(Zahl- und Registerstellendienste)

(1) *Pflichten der Zahlstelle und Registerstelle*. Die Deutsche Bank Aktiengesellschaft übernimmt für die Emittentin die Funktionen einer Zahlstelle und Registerstelle (in diesem Zusammenhang die „**Zahlstelle**" oder die „**Registerstelle**"). Die Zahlstelle handelt ausschließlich als Erfüllungsgehilfin der Emittentin und übernimmt keinerlei Verpflichtungen gegenüber den Gläubigern und es wird kein Auftrags- oder Treuhandverhältnis zwischen ihr und den Gläubigern begründet. Die Pflichten der Zahlstelle und Registerstelle ergeben sich aus den Bestimmungen dieser Anleihebedingungen und aus den Bestimmungen der separat abgeschlossenen Zahlstellenvereinbarung. Insbesondere wird die Zahlstelle die von der Emittentin erbrachten Zahlungen an Kapital und Zinsen an die ihr bis spätestens 10 Geschäftstage vor dem Zahlungstermin bekannt gemachten jeweiligen Gläubiger weiterleiten sowie die Eintragungen in das Register vornehmen. Weiterhin wird die Zahlstelle etwaige Mitteilungen der Emittentin oder der Gläubiger an die jeweils andere Partei weiterleiten.

(2) *Sorgfaltsstandard.* Die Zahlstelle bzw. die Registerstelle haftet bei der Ausführung ihrer Aufgaben für die Sorgfalt eines ordentlichen Kaufmanns. Die Zahlstelle bzw. die Registerstelle übernimmt keine Gewähr für die an die Emittentin oder Gläubiger weitergeleiteten Informationen oder Mitteilungen oder die rechtzeitige Geltendmachung jeglicher Rechte der Emittentin oder der Gläubiger. In Bezug auf jegliche Haftung für eine Vertragsverletzung, einschließlich etwaiger Schadensminderungspflichten, finden die deutschen gesetzlichen Bestimmungen Anwendung.

§ 11
(Stempelsteuern, Kosten)

Die Emittentin trägt sämtliche Stempelsteuern und Dokumentensteuern, welche im Zusammenhang mit der Ausfertigung oder Unterzeichnung der Namensschuldverschreibung oder der Ausführung von Zahlungen zahlbar werden. Im Fall einer von der Emittentin

§ 10
(Paying Agency and Registrar Services)

(1) *Duties of the Paying Agent and Registrar.* Deutsche Bank Aktiengesellschaft shall perform the functions of a paying agent and registrar on behalf of the Issuer (in this context, the "**Paying Agent**" or the "**Registrar**"). The Paying Agent acts solely as the agent of the Issuer and does not assume any obligations towards or relationship of agency or trust for any Noteholder. The duties of the Paying Agent and Registrar shall be determined by these Conditions of Issue and by the separately agreed agency agreement. The Paying Agent shall in particular pass on to the particular Noteholders notified to it at least 10 Business Days prior to the payment date any payments of principal and interest made by the Issuer and shall effect any entries into the registry. The Paying Agent shall also forward any communications sent by the Issuer or the Noteholders to the relevant other party.

(2) *Standard of Care*. The Paying Agent and the Registrar shall be responsible for the due care of a proper merchant for the performance of its duties. The Paying Agent and the Registrar assume nor responsibility for any information or communication it has passed on to the Issuer or the Noteholders or for the timely exercise of any rights of the Issuer or the Noteholders. For any liability for breach of contract the provisions of German statutory law shall apply, including any duties to mitigate damages.

§ 11
(Stamp Duties, Expenses)

The Issuer shall bear all stamp duties or document taxes that arise as a result of the execution or delivery of the Registered Notes or the execution of any payments. The Issuer shall bear all costs that arise reasonably as a result of a change of the terms of the Registered Notes

§ 12
(Informationspflichten)

(1) *Übersendung von Dokumenten.* Die Emittentin wird die Gläubiger während der Laufzeit der Namensschuldverschreibungen über ihre finanzielle Situation und die Entwicklung ihres Geschäfts informieren. Dieses erfolgt durch die Übersendung des jeweils aktuellen, von unabhängigen Wirtschaftsprüfern geprüften und testierten Jahresabschlusses und, falls vorhanden, Konzernabschlusses der Emittentin sowie etwaiger veröffentlichter Zwischenberichte. Die Übersendung dieser Dokumente an die Gläubiger erfolgt innerhalb von 30 Tagen nach der Veröffentlichung bzw. 60 Tage nach Fertigstellung des betreffenden Abschlusses oder Berichts, spätestens jedoch 180 Tage nach dem Ende des betreffenden Geschäftsjahres der Emittentin elektronisch oder in ausreichender Anzahl über die Zahlstelle. Eine Übersendung ist nicht erforderlich, wenn die genannten Dokumente frei auf einer den Gläubigern bekannten Internetseite verfügbar sind.

(2) *Informationspflicht.* Die Emittentin wird die Gläubiger über die Zahlstelle unverzüglich und unaufgefordert informieren, falls ein Ereignis eingetreten ist oder einzutreten droht, das die Gläubiger sofort, nach Ablauf einer Frist oder Abgabe einer Mahnung zu einer Kündigung der Namensschuldverschreibungen berechtigen würde. Eine Information erfolgt auch über alle Umstände, die wesentliche nachteilige Auswirkungen auf die Fähigkeit der Emittentin, ihren Verpflichtungen unter diesen Namensschuldverschreibungen nachzukommen, haben könnten. Weiter wird die Emittentin auf jederzeit mögliches, begründetes Verlangen eines Gläubigers im Rahmen des gesetzlich Zulässigen über ihre wirtschaftliche Lage und den Jahresabschluss Auskunft erteilen.

(3) *Weitergabe von Informationen.* Die Gläubiger sind berechtigt, Informationen über die Emittentin zum Zwecke der Weiterveräußerung und Abtretung der Namensschuldverschreibungen an etwaige Erwerber weiterzugeben.

§ 12
(Information Obligations)

(1) *Submission of Documents*. During the term of the Registered Notes, the Issuer shall inform the Noteholders about its financial situation and the development of its business. Such information shall be effected by submission of the most recent annual accounts, audited by independent auditors and, if available, consolidated accounts of the Issuer and any published interim reports. Such documents shall be submitted to the Noteholders through the Paying Agent electronically or in sufficient quantities no later than 30 days after the publication or 60 days after the completion of the relevant account or report, but in any event no later than 180 days after the relevant financial year of the Issuer. To the extent such accounts and reports are freely available on an internet website of which the Noteholders are aware any physical submission is not necessary.

(2) *Information Duty*. The Issuer shall promptly and without any further request inform the Noteholders through the Paying Agent of any event that has occurred or is imminent that would entitle the Noteholders to terminate the Registered Notes immediately, upon the expiration of a grace period or following a reminder. Information shall also be made about all circumstances that may have a material adverse effect on the ability of the Issuer to meet its obligations under the Registered Notes. Furthermore, the Issuer shall, to the extent legally permissible, provide at any time information about its economic situation and annual accounts upon any Noteholder's reasonable request.

(3) *Passing on Information*. The Noteholders shall be entitled to pass on information relating to the Issuer for the purpose of reselling or assigning the Registered Notes to possible purchasers.

§ 13
(Mitteilungen)

Vorbehaltlich einer schriftlich oder elektronisch mitgeteilten Anschriftenänderung erfolgen alle Mitteilungen wie folgt:

(a) Alle Mitteilungen von Gläubigern zur Weiterleitung an die Emittentin (einschließlich Anzeige von Abtretungen oder Kündigungen) und alle Mitteilungen der Emittentin für die Gläubiger:

Deutsche Bank Aktiengesellschaft
COO Global Markets Operations
Schuldschein Operations
Mainzer Landstraße 11-17
60329 Frankfurt am Main
Tel.: +49 69 910 31441
Fax: +49 69 910 41325
E-Mail: GTO-FFT.SDO@db.com

(b) Kontaktangaben der Emittentin für die Weiterleitung von Mitteilungen:

QIAGEN N.V.
z. Hd. v. Leiter Global Treasury
Hulsterweg 82
5912 PL Venlo
The Netherlands

Tel.: + 31 77 3556644
Fax: + 31 77 3556640
E-Mail: global.treasury@qiagen.com

§ 13
(Notices)

Subject to any changes notified in writing or electronically the following shall apply to any communications:

(a) All communications of Noteholders to be passed on to the Issuer (including notifications of assignment or termination) and all communications of the Issuer for Noteholders:

Deutsche Bank Aktiengesellschaft
COO Global Markets Operations
Schuldschein Operations
Mainzer Landstraße 11-17
60329 Frankfurt am Main
Tel.: +49 69 910 31441
Fax: +49 69 910 41325
Email: GTO-FFT.SDO@db.com

(b) Contact details of the Issuer for forwarded communications:

QIAGEN N.V.
Attention: Head of Global Treasury
Hulsterweg 82
5912 PL Venlo
The Netherlands

Phone: + 31 77 3556644
Facsimile: +31 77 3556640
Email: global.treasury@qiagen.com

§ 14
(Verjährungsfrist)

Die Verpflichtungen der Emittentin zur Zahlung von Kapital und Zinsen auf die Namensschuldverschreibungen verjähren (i) in Bezug auf Kapital nach Ablauf von 10 Jahren nach dem Zahlungstermin für Kapitalbeträge und (ii) in Bezug auf Zinsen nach Ablauf von 4 Jahren nach dem Zahlungstermin für Zinsbeträge.

§ 14
(Prescription Period)

The obligations of the Issuer to pay principal and interest upon the Registered Notes shall expire (i) with regard to principal after the expiration of 10 years after the payment date for the payment of principal and (ii) with regard to interest after the expiration of 4 years after the payment date for the payment of interest.

§ 15
(Schlussbestimmungen)

§ 15
(Final Provisions)

(1) *Anwendbares Recht.* Form und Inhalt dieser Anleihebedingungen und die sich daraus ergebenden Rechte und Pflichten bestimmen sich in jeder Hinsicht nach deutschem Recht.

(1) *Governing Law.* These Conditions of Issue, both as to form and content, and the rights and duties arising therefrom shall in all respects be governed by German law.

(2) *Gerichtsstand und Erfüllungsort.* Gerichtsstand ist Frankfurt am Main. Die Gläubiger können ihre Ansprüche jedoch auch vor Gerichten in jedem anderen Land, in dem Vermögenswerte der Emittentin belegen sind, geltend machen. Erfüllungsort ist Frankfurt am Main.

(2) *Place of Jurisdiction and Place of Performance.* The place of jurisdiction shall be Frankfurt am Main. The Noteholders may, however, also pursue their claims before courts in any other country in which assets of the Issuer, as the case may be, are located. The place of performance shall be Frankfurt am Main.

(3) *Schriftform*. Jede Änderung dieser Anleihebedingungen sowie jeder Verzicht auf das Schriftformerfordernis bedarf zur Wirksamkeit der Schriftform.

(3) *Written Form*. Any amendment to these Conditions of Issue and also any waiver of the requirement of written form shall be valid only if made in writing.

(4) *Salvatorische Klausel.* Sollten irgendwelche Bestimmungen dieser Anleihebedingungen ganz oder teilweise rechtsunwirksam sein oder werden, so bleiben die anderen Bestimmungen dieser Anleihebedingungen in Kraft. Unwirksame Bestimmungen sind dem Sinn und Zweck dieser Anleihebedingungen entsprechend durch wirksame Bestimmungen zu ersetzen, die in ihrer wirtschaftlichen Auswirkung denjenigen der unwirksamen Bestimmungen so nahe kommen, wie rechtlich möglich. Entsprechendes gilt für ergänzungsbedürftige Lücken.

(4) *Partial Invalidity*. Should any of the provisions of the Conditions of Issue be or become invalid, in whole or in part, the other provisions of the Conditions of Issue shall remain in force. Invalid provisions shall, according to the intent and purpose of the Conditions of Issue, be replaced by such valid provisions the economic effect of which is as close as legally possible to that of the invalid provisions. The same applies to any gaps for which supplemental clauses would be required.

(5) *Verbindliche Sprache.* Die Fassung in deutscher Sprache ist verbindlich und der englische Text ist eine unverbindliche Übersetzung.

(5) *Binding Language*. The German language version is binding and the English language text is a non-binding translation.

(6) *Zustellungsbevollmächtigter*. Für alle Rechtsstreitigkeiten, die sich aus oder in Verbindung mit den Namensschuldverschreibungen ergeben, bestellt die Emittentin unwiderruflich QIAGEN GmbH, QIAGEN Strasse 1, 40724 Hilden, zu ihrem Zustellungsbevollmächtigten in Deutschland.

(6) *Process Agent.* For all legal disputes arising under or in connection with the Registered Notes the Issuer irrevocably appoints QIAGEN GmbH, QIAGEN Strasse 1, 40724 Hilden, Germany as authorized agent for accepting service of process in Germany.

§ 16
(Erklärung gemäß dem Geldwäschegesetz)

Die Emittentin versichert den Gläubigern, dass sie die mit dieser Namensschuldverschreibung gewährten Mittel ausschließlich für ihre eigene Rechnung aufnimmt und nicht für eine andere Person als wirtschaftlich Berechtigter im Sinne des deutschen Geldwäschegesetzes.

§ 16
(Statement according to the German Anti-Money-Laundering Act)

The Issuer confirms to the Noteholders that it raises the funds under these Registered Notes exclusively for its own account and not for another person as beneficial owner within the meaning of the German Anti-Money-Laundering Act (*Geldwäschegesetz*).

Anhang 1 / Annex 1

Muster der Abtretungsvereinbarung / Form of the Assignment Agreement

Abtretungsvereinbarung

zwischen

[ ]
(„**Zedent**")

und

[ ]
(„**Zessionar**")

§ 1
(Abtretung)

(1) *Abtretung.* Der Zedent tritt hiermit dem Zessionar seine (Teil)forderung gegenüber QIAGEN N.V. (die „**Emittentin**") gemäß den in Kopie beigefügten Anleihebedingungen für Namensschuldverschreibungen vom 12. August 2022 in Bezug auf die EUR 70.000.000 Namensschuldverschreibungen (die „**Anleihebedingungen**") einschließlich Zinsen und aller im Nennbetrag von

EUR [●].000.000

(in Worten: Euro [●] Millionen)

mit Wirkung zum [●] 20[●], ab.

(2) *Annahme der Abtretung.* Der Zessionar nimmt diese Abtretung hiermit an.

§ 2
(Anzeige)

(1) *Anzeige der Abtretung*. Der Zedent wird diese Abtretung der Deutschen Bank Aktiengesellschaft, COO Global Markets Operations
Schuldschein Operations, Frankfurt Issuance & Treasury Support, Fax: +49 69 910 41325 (die „**Zahlstelle**"), unter Angabe des Namens und der Anschrift des Zessionars sowie des Datums, von dem ab diesem die Zinsen zustehen, unverzüglich unter Beifügung einer unterzeichneten Ausfertigung dieser Abtretungsvereinbarung anzeigen.

(2) *Voraussetzungen für eine wirksame Abtretung*. Der Zessionar nimmt zur Kenntnis,

Assignment Agreement

between

[ ]
("**Assignor**")

and

[ ]
("**Assignee**")

§ 1
(Assignment)

(1) *Assignment.* The Assignor hereby assigns to the Assignee his (partial) claim against QIAGEN N.V. (the "**Issuer**") pursuant to the Conditions of Issue of the Registered Notes dated 12 August 2022 relating to the EUR 70,000,000 Registered Notes (the "**Conditions of Issue**") a copy of which is attached, together with interest and all rights ancillary thereto, in the nominal amount of

EUR [●],000,000

(in words: Euro [●] million)

with effect from [●] 20[●].

(2) *Agreement to the Assignment.* The Assignee hereby agrees to such assignment.

§ 2
(Notification)

(1) *Notification of Assignment*. The Assignor shall immediately notify this assignment in writing to Deutsche Bank Aktiengesellschaft (the "**Paying Agent**"), COO Global Markets Operations Schuldschein Operations, Frankfurt Issuance & Treasury Support, Fax: +49 69-910 41325, indicating the name and address of the Assignee as well as the date from which the Assignee shall be entitled to interest together with an executed version of this assignment agreement.

(2) *Requirements for valid assignment.* The Assignee acknowledges that any further

(3) *Schuldbefreiende Leistung*. Der Zessionar nimmt weiter zur Kenntnis, dass eine Zahlung an den letzten der Zahlstelle ordnungsgemäß gemäß § 10 (1) der Anleihebedingungen angezeigten Zedenten die Emittentin in voller Höhe von der betreffenden Verbindlichkeit aus den Namensschuldverschreibungen befreit.

§ 3
(Schlussbestimmungen)

(1) *Anwendbares Recht.* Diese Vereinbarung bestimmt sich in jeder Hinsicht nach dem deutschen Recht.

(2) *Ausfertigungen.* Diese Vereinbarung wurde in drei Ausfertigungen unterzeichnet. Je eine Ausfertigung wird an die Zahlstelle, an den Zedenten und an den Zessionar ausgehändigt. Jede der Ausfertigungen gilt als Original.

[*Ort, Datum*]

_____ _____
(Zedent)

_____ _____
(Zessionar)

(3) *Discharge of obligations.* The Assignee further acknowledges that any payments made to the most recent Assignor duly notified to the Paying Agent in accordance with § 10 (1) of the Conditions of Issue shall fully discharge the Issuer from its obligations under the Registered Notes.

§ 3
(Final Provisions)

(1) *Governing Law.* This agreement shall in all respects be governed by German law.

(2) *Counterparts.* This agreement will be made in three original copies. One copy each will be retained by the Assignor and Assignee, respectively and one copy will be sent to the Paying Agent. Each of these original copies shall constitute an original.

[*Place, Date*]

_____ _____
(Assignor)

_____ _____
(Assignee)

Anhang 2 / Annex 2

Muster der Zahlstellenvereinbarung / Form of the Paying Agency Agreement

Zahlstellenvereinbarung

Zwischen

1) Deutsche Bank Aktiengesellschaft, Taunusanlage 12, 60325 Frankfurt am Main (die „**Zahlstelle**")

und

2) QIAGEN N.V., Hulsterweg 82, 5912 PL Venlo, The Netherlands (die „**Emittentin**")

bezüglich der am 16. August 2022 ausgegebenen auf den Namen lautenden Namensschuldverschreibungen mit einem Gesamtnennbetrag von EUR 70.000.000 (die „**Namensschuldverschreibungen**") sowie der Anleihebedingungen bezüglich der Namensschuldverschreibungen (die „**Anleihebedingungen**").

§ 1
(Bestellung der Zahlstelle)

(1) *Bestellung.* Die Emittentin bestellt die Zahlstelle im Hinblick auf die Namensschuldverschreibungen mit den Pflichten als Zahlstelle und Registerstelle, die in den Anleihebedingungen und in diesem Vertrag bestimmt sind.

(2) *Kündigung*. Die Emittentin ist berechtigt, die Bestellung der Zahlstelle mit einer Frist von 30 Tagen durch schriftliche Kündigung zu beenden. Ebenso ist die Zahlstelle berechtigt, ihre Bestellung als Zahlstelle gegenüber der Emittentin jederzeit mit einer Frist von 45 Tagen schriftlich zu kündigen. Dies gilt jeweils vorbehaltlich der Bestimmungen von Absatz (3).

(3) *Nachfolgestelle.* Eine Kündigung durch die Zahlstelle gemäß Absatz (2) wird erst wirksam

Agency Agreement

Between

1) Deutsche Bank Aktiengesellschaft, Taunusanlage 12, 60325 Frankfurt am Main (the "**Paying Agent**")

and

2) QIAGEN N.V., Hulsterweg 82, 5912 PL Venlo, The Netherlands (the "**Issuer**")

in relation to the registered notes in an aggregate nominal amount of EUR 70,000,000 issued on 16 August 2022 (the "**Registered Notes**") and the conditions of issue relating to the Registered Notes (the "**Conditions of Issue**").

§ 1
(Appointment of the Paying Agent)

(1) *Appointment.* The Issuer appoints the Paying Agent in relation to the Registered Notes with the duties as paying agent and registrar set out herein and in the Conditions of Issue.

(2) *Termination*. The Issuer may terminate the appointment of the Paying Agent by giving 30 days' written notice. The Paying Agent may resign from its appointment as paying agent at any time by giving 45 days' written notice to the Issuer. The termination right is in each case subject to the conditions of subparagraph (3).

(3) *Successor Agent*. Any termination by the Paying Agent pursuant to subparagraph (2) shall

Wenn sich die Emittentin nicht gegen die Ernennung einer Nachfolgestelle entschieden hat, trägt sie die Kosten einer solchen Ernennung, wenn die Kündigung der Zahlstelle aus einem wichtigen Grund erfolgt ist. Einen wichtigen Grund stellen unter anderem (i) eine wesentliche Veränderung der aufsichtsrechtlichen Vorgaben an die Zahlstelle, (ii) die Nichteinhaltung von *Know-your-Client*- oder Geldwäschebestimmungen durch die Emittentin oder eine andere relevante Partei, (iii) interne Vorgaben der Zahlstelle, (iv) das Vorliegen eines wichtigen Grundes, der zu einer außerordentlichen Kündigung der Namensschuldverschreibungen berechtigt, (v) ein wesentlicher Interessenskonflikt der Zahlstelle und (vi) andere im wesentlichen ähnliche Gründe dar.

The Issuer, unless it elects not to appoint a Successor Agent, will bear the cost of such appointment if the termination by the Paying Agent is based on good cause. Such good cause shall include but not be limited to (i) a material change in the regulatory requirements imposed on the Paying Agent, (ii) the non-compliance by the Issuer or any relevant party with know-your-client or money laundering requirements (iii) internal policy requirements of the Paying Agent, (iv) the occurrence of an Event of Default, (v) a material conflict of interest of the Paying Agent and (vi) substantially similar reasons.

§ 2
(Zahlungen)

§ 2
(Payments)

(1) *Zahlung.* Die Emittentin wird sämtliche unter den Namensschuldverschreibungen fälligen Beträge nicht später als 13:00 Uhr (Frankfurter Zeit) am jeweiligen Fälligkeitstag auf einem Konto der Zahlstelle in gleichtägig verfügbaren Mitteln anschaffen. Diese Mittel werden von der Zahlstelle nicht verzinst. Wenn die Mittel nach dem im ersten Satz bezeichneten Zeitpunkt eingehen und ohne Einschränkung der Forderungen der Gläubiger, wird die Zahlstelle weiterhin vernünftige Anstrengungen zur Durchführung der Zahlung aufwenden, haftet aber nicht für irgendwelche Schäden einer verspäteten Zahlung. Die Emittentin wird der Zahlstelle auf Nachfrage unverzüglich die Zahlungsreferenz sowie alle erforderlichen Angaben zur Identifikation der Zahlung in den Zahlungssystemen bestätigen.

(2) *Vorzeitige Zahlung an die Zahlstelle.* Im Falle einer wesentlichen Verschlechterung des der

(1) *Payments.* The Issuer shall make available all amounts due under the Registered Notes in same-day funds in an account of the Paying Agent not later than 1:00 p.m. (Frankfurt time) on the date of the relevant payment. The Paying Agent shall not pay any interest on such funds. If the funds are received by the Paying Agent after the time set out in the first sentence of this paragraph and without prejudice to the claims of the Noteholders, the Paying Agent shall continue to effect any payment by employing reasonable efforts but shall not be liable for any damages that result from any late payments. Upon request the Issuer will confirm to the Paying Agent without undue delay the payment reference and all other information that is necessary to identify the payment in the payment systems that are used for the money transfer.

(2) *Prior Day Funding.* In the event of a material deterioration of the financial situation of the

§ 3
(Haftungsfreistellung)

§ 3
(Indemnity)

Die Emittentin verpflichtet sich, die Zahlstelle von sämtlichen Schäden (einschließlich aller angemessen entstandener Kosten für Rechtsberater sowie zu entrichtender Umsatzsteuer) freizustellen, die im Zusammenhang mit dieser Zahlstellenvereinbarung entstehen und welche nicht auf einer vorsätzlichen oder grob fahrlässigen Pflichtverletzung der Zahlstelle beruhen. Die Freistellungsverpflichtung überdauert die Laufzeit oder Beendigung dieser Zahlstellenvereinbarung und bleibt ungeachtet der Rückzahlung der Namensschuldverschreibungen wirksam.

The Issuer shall indemnify the Paying Agent against any damages (including all adequate legal fees and any value-added tax) arising in connection with this Agency Agreement, unless to the extent such damages arise from the wilful default or gross negligence of the Paying Agent. The obligation to indemnify will survive the term and termination of this Agency Agreement or the repayment of the Registered Notes.

§ 4
(Mitteilungen)

Vorbehaltlich schriftlich mitgeteilter Anschriftenänderungen, gilt Folgendes für Mitteilungen unter dieser Zahlstellenvereinbarung:

(a) Mitteilungen der Zahlstelle an die Emittentin:

QIAGEN N.V.
z. Hd. v. Leiter Global Treasury
Hulsterweg 82
5912 PL Venlo
The Netherlands

Tel.: + 31 77 3556644
Fax: + 31 77 3556640
E-Mail: global.treasury@qiagen.com

(b) Mitteilungen der Emittentin an die Zahlstelle:

Deutsche Bank Aktiengesellschaft
Trust & Securities Services (TSS)
Taunusanlage 12
60325 Frankfurt am Main
Deutschland
Tel: +49 69 910 30094
Fax: +49 69 910 38672
Email: frankfurt.debtservices@db.com

§ 4
(Communications)

Subject to any changes of address notified in writing, the following shall apply to any communications under this Agency Agreement:

(a) Communications of the Paying Agent intended for the Issuer:

QIAGEN N.V.
Attention: Head of Global Treasury
Hulsterweg 82
5912 PL Venlo
The Netherlands

Phone: + 31 77 3556644
Facsimile: +31 77 3556640
Email: global.treasury@qiagen.com

(b) Communications of the Issuer intended for the Paying Agent:

Deutsche Bank Aktiengesellschaft
Trust & Securities Services (TSS)
Taunusanlage 12
60325 Frankfurt am Main
Deutschland
Tel: +49 69 910 30094
Fax: +49 69 910 38672
Email: frankfurt.debtservices@db.com

§ 5
(Erklärung über die Einhaltung von

§ 5
(Statement about Sanction Compliance)

(1) Die Emittentin sichert zu, dass weder die Emittentin noch eine ihrer Tochtergesellschaften oder gesetzlichen Vertreter oder - nach deren bestem Wissen - ein mit der Emittentin verbundenes Unternehmen, ein rechtsgeschäftlicher Vertreter oder Mitarbeiter der Emittentin a) eine Handlung vorgenommen hat, die zu einem Verstoß solcher Personen gegen (i) Rechtsvorschriften, welche das U.S. Office of Foreign Assets Control des U.S. Department des Treasury („**OFAC**") und das Office of Export Enforcement des U.S. Department of Commerce („**OEE**") überwacht oder (ii) gleichwertige Sanktionen oder Maßnahmen, die von den Vereinigten Staaten von Amerika, dem US-Außenministerium, der Bundesrepublik Deutschland, der Europäischen Union, den Vereinten Nationen oder anderer zuständiger Sanktionsstellen/-behörden verhängt werden, führte oder geführt hat (zusammen „**Sanktionen**") oder b) Gegenstand von Sanktionen ist oder von einer oder mehreren Personen, welche Gegenstand von Sanktionen sind, zu 50% oder mehr gehalten, oder anderweitig beherrscht bzw. kontrolliert wird oder in deren Auftrag handelt (zusammen „**Sanktionierte Personen**") oder in einem Land oder Gebiet ansässig oder organisiert ist, welches Gegenstand von Sanktionen ist (insbesondere, aber nicht begrenzt auf Afghanistan, Kuba, Sudan, Syrien, Iran, Nordkorea, die sogenannte Volksrepublik Luhansk, die sogenannte Volksrepublik Donezk und die Krim Region, zusammen „**Sanktionierte Länder**").

(1) The Issuer represents and agrees that none of the Issuer or any of its subsidiaries or directors nor to the best of its knowledge, any controlled affiliate, officer or employee of the Issuer a) has taken any actions which would violate (i) any sanctions or trade embargos enforced by the U.S. Department of the Treasury's Office of Foreign Assets Control (**"OFAC"**), the Office of Export Enforcement of the U.S. Department of Commerce (**"OEE"**) or (ii) any other equivalent sanctions regulation administered by the United States, the US Office of State, the Federal Republic of Germany, the European Union, the United Nations or other competent sanction authorities or b) is a Sanction Target or is owned 50% or more by or otherwise controlled by, or acting on behalf of one or more persons that are subject or target of sanctions (together **"Sanctioned Persons"**) or is located, organized or resident in a country or territory that is the subject or the target of Sanctions (especially but not limited to, Afghanstan, Cuba, Sudan, Syria, Iran, North Korea, the called-called People's Republic of Luhansk and the so-called People's Republic of Donetzk and the Crimea region) (each, a **"Sanctioned Country"**).

(2) Die Emittentin sichert zu, die erhaltenen Erlöse aus der Begebung des Namensschuldverschreibung ausschließlich für ihre gewöhnliche Geschäftstätigkeit und zur

(2) The Issuer will use the proceeds from the issue of the Registered Notes solely for use in its ordinary operations and to meet its general liquidity requirements and will lend or make

(3) Die Emittentin sichert zu, dass sie von der Geschäftsleitung genehmigte gruppenweite Richtlinien und Prozesse aufgestellt hat, die darauf ausgerichtet sind, die Einhaltung von anwendbaren Sanktionen zu gewährleisten.

(3) The Issuer represents that it has instituted management approved, group-wide policies and procedures designed to prevent sanctions violations.

(4) Die unter diesem § 5 Absatz (1) bis (3) abgegebenen Zusicherungen gelten als nicht abgegeben bzw. sind nicht anwendbar auf die Zahlstelle bzw. die Emittentin, soweit dies zu einer Verletzung des § 7 Außenwirtschaftsverordnung, einer Bestimmung der Verordnung (EG) Nr. 2271/96 oder einer sonstigen Anti-Boykott-Bestimmung führt.

(4) The representations made in this § 5 paragraph. (1) through (3) shall be deemed not made or shall not apply to either the Paying Agent or the Issuer to the extent that making such representation would lead to an infringement of § 7 German Foreign Trade Act (*Außenwirtschaftsverordnung*), any provision of EU Regulation Nr. 2271/96 or any other anti-boycott provision.

§ 6
(Schlussbestimmungen)

§ 6
(Final Provisions)

(1) *Anwendbares Recht und Gerichtsstand.* Form und Inhalt dieser Zahlstellenvereinbarung und die sich daraus ergebenden Rechte und Pflichten bestimmen sich in jeder Hinsicht nach deutschem Recht. Gerichtsstand und Erfüllungsort ist Frankfurt am Main.

(1) *Governing Law and Place of Jurisdiction.* This Agency Agreement, both as to form and content, and the rights and duties arising therefrom shall in all respects be governed by German law. The place of jurisdiction and performance shall be Frankfurt am Main.

(2) *Salvatorische Klausel.* Sollten irgendwelche Bestimmungen dieser Vereinbarung ganz oder teilweise rechtsunwirksam sein oder werden, so bleiben die anderen Bestimmungen dieser Vereinbarung in Kraft. Unwirksame Bestimmungen sind dem Sinn und Zweck dieses Vertrages entsprechend durch wirksame Bestimmungen zu ersetzen, die in ihrer wirtschaftlichen Auswirkung denjenigen der unwirksamen Bestimmungen so nahe kommen, wie rechtlich möglich. Entsprechendes gilt für ergänzungsbedürftige Lücken.

(2) *Partial Invalidity*. Should any of the provisions of this Agency Agreement be or become invalid, in whole or in part, the other provisions of this Agreement shall remain in force. Invalid provisions shall, according to the intent and purpose of this Agreement, be replaced by such valid provisions the economic effect of which is as close as legally possible to that of the invalid provisions. The same applies to any gaps requiring to be filled.

(3) *Ausfertigung.* Diese Vereinbarung wird in deutscher Sprache nebst unverbindlicher englischer Übersetzung in zwei Ausfertigungen unterzeichnet. Jede Ausfertigung gilt als ein Original. Zum Nachweis der Forderung bedarf es nicht der Vorlage dieser Vereinbarung.

(3) *Counterparts*. This Agreement shall be signed in two counterparts in the German language with a non-binding English translation. Each counterpart shall be considered an original. In order to furnish proof of the claim the presentation of the Agreement is not required.

Venlo und Frankfurt am Main, 12 August 2022

Venlo and Frankfurt am Main, 12. August 2022

QIAGEN N.V.

DEUTSCHE BANK AKTIENGESELLSCHAFT

(als Zahlstelle)
(as Paying Agent)

_____ _____

Exhibit 8.1

LIST OF SUBSIDIARIES

The following is a list of the Registrant's subsidiaries as of December 31, 2022, other than certain subsidiaries that did not in the aggregate constitute a significant subsidiary.

Company Name	Jurisdiction of Incorporation
Amnisure International LLC	USA
BLIRT S.A.	Poland
Cellestis Pty. Ltd.	Australia
Life Biotech Partners B.V.	Netherlands
NeuMoDx Inc.	USA
STAT-Dx Life S.L.	Spain
QIAGEN Aarhus A/S	Denmark
QIAGEN AB	Sweden
QIAGEN AG	Switzerland
QIAGEN Australia Holding Pty. Ltd.	Australia
QIAGEN Benelux B.V.	Netherlands
QIAGEN Beverly LLC	USA
QIAGEN Business Management MEA Ltd.	UAE
QIAGEN Business Services (Manila), Inc.	Philippines
QIAGEN Business Services S.p.z.o.o.	Poland
QIAGEN China (Shanghai) Co. Ltd.	China
QIAGEN Luxembourg SARL	Luxembourg
QIAGEN Deutschland Holding GmbH	Germany
QIAGEN Distribution B.V.	Netherlands
QIAGEN France S.A.S.	France
QIAGEN Gaithersburg LLC	USA
QIAGEN GmbH	Germany
QIAGEN Hamburg GmbH	Germany
QIAGEN Hong Kong Pte. Ltd.	China
QIAGEN Inc.	Canada
QIAGEN India Pvt. Ltd.	India
QIAGEN K.K.	Japan
QIAGEN Korea Ltd.	Korea (South)
QIAGEN LLC	USA
QIAGEN Ltd.	UK
QIAGEN Manchester Ltd.	UK
QIAGEN Marseille S.A.	France
QIAGEN North American Holdings Inc.	USA
QIAGEN Pty. Ltd.	Australia
QIAGEN Redwood City Inc.	USA
QIAGEN Sciences LLC	USA
QIAGEN Shared Services LLC	USA
QIAGEN Singapore Pte. Ltd.	Singapore
QIAGEN S.r.l.	Italy
QIAGEN U.S. Finance LLC	USA

Exhibit 12.1

CERTIFICATION UNDER SECTION 302

I, Thierry Bernard, certify that:

1. I have reviewed this annual report on Form 20-F of QIAGEN N.V;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:
    (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    (c) Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    (d) Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and
5. The company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):
    (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and
    (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: March 10, 2023

/s/ Thierry Bernard
Thierry Bernard
Managing Director and Chief Executive Officer

Exhibit 12.2

CERTIFICATION UNDER SECTION 302

I, Roland Sackers, certify that:

1. I have reviewed this annual report on Form 20-F of QIAGEN N.V;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:
    (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    (c) Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    (d) Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and
5. The company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):
    (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and
    (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: March 10, 2023

/s/ Roland Sackers

Roland Sackers
Managing Director and Chief Financial Officer

Exhibit 13.1

CERTIFICATIONS UNDER SECTION 906

Pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, chapter 63 of title 18, United States Code), each of the undersigned officers of QIAGEN N.V., does hereby certify, to such officer's knowledge, that:

The Annual Report for the year ended December 31, 2022 (the "Form 20-F") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and the information contained in the Form 20-F fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: March 10, 2023

/s/ Thierry Bernard
Thierry Bernard
Managing Director and Chief Executive Officer

Dated: March 10, 2023

/s/ Roland Sackers
Roland Sackers
Managing Director and Chief Financial Officer

Exhibit 15.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the registration statement (No. 333-162052) on Form F-3 and the registration statements (Nos. 333-178035, 333-127393, 333-145171, 333-203220, and 333-217742) on Form S-8 of QIAGEN N.V. of our reports dated March 10, 2023, with respect to the consolidated financial statements of QIAGEN N.V. and the effectiveness of internal control over financial reporting.

/s/ KPMG AG Wirtschaftsprüfungsgesellschaft

Düsseldorf, Germany

March 10, 2023