TERMS OF REFERENCE

LABORATORY TESTING SERVICE

GOAL an International Humanitarian Organization has had a presence in Turkey since 2013 and has been contributing to the migrant response since 2016 with a focus on responding to needs in health service delivery, social safety nets and the protection of vulnerable and marginalized migrants in southern Turkey.

GOAL has been working in Syria since 2013, responding to the acute needs of conflict affected communities. GOAL is working in Idleb Governate, both through direct implementation and through partners, delivering food, non-food programming to highly vulnerable populations, and provision of Water, Sanitation and Hygiene (WASH) through support to Water units, as well as emergency support to recently displaced households."

March 2022

SCOPE

GOAL invites prospective Service Providers to submit tenders for the service of Laboratory Testing for food and non-food items (Engine Oil). GOAL would like to enter a FWA for a period of 3- years with the successful Service Provider(s).

Scope of Work Guideline

Laboratory Testing
A. SAMPLE RECEIPT B. LIST of COMMODITIES AND ANALYZE METHODS
Reporting
C. THE ANALYSIS REPORT
Requirements
D. ACCREDITAION AND CERTIFICATION REQUIREMENTS
Others
E. RECORDS MANAGEMENT F. RISK MANAGEMENT

LABORATORY TESTING

A. SAMPLE RECEIPT

- Contracted Laboratory to share sample receipt email with GOAL, including sample photos with clearly seen batch number of the samples.

B. LIST OF COMMODITIES AND ANALYZE METHODS

- Please see tables below show the required parameters for varied commodities in Annex -1 and Annex-2.

C. THE ANALYSIS REPORTS

The analysis reports must include below details in each report shared with GOAL.

1) Name of organization
2) Purchase Order Number
3) Name of Commodity Analyzed
4) Supplier Name
5) Brand of Commodity
6) Seal No
7) Sample quantity taken
8) Type of Packaging (if any)
9) Production Date – (if provided)
10) Product Expiry Date
11) Start / End Date of Analysis
12) Date of the Analysis Result
13) Batch &/or Lot Number of the Commodity
14) Date of Delivery of Sample to Laboratory
15) Temperature of Sample (if applicable)
16) Photo of Sample Received with clearly seen batch &/or Lot number, expiry date (brand if available)
17) Name of the Laboratory (if the service is outsourced)
18) A Remarks section includes comments about the analysis conducted by Laboratory
19) Approval and Signatures by Laboratory Authority
20) For same cases, GOAL requires technical advice from the contracted laboratory about the non-comply analyses result.

❖ *After the analysis is completed, the analysis report should be shared with GOAL's relevant department by email in 24 hours and original copies to be sent to GOAL Antakya Office.*

D. ACCREDITATION AND CERTIFICATION REQUIREMENTS

- The Laboratory and Sub-Contractor (if any) must ensure that all devices that are used for analysis are calibrated as per standards.
- The Laboratory and Sub-Contractor (if any) must submit TÜRK-AK certificate as a proof of authorization.
- If the Service Providers Laboratory Testing facilities are not based in Turkey, then proof of authorization from an equivalent government body must be provided.
- The Laboratory must submit latest audit report.
- The Laboratory must submit ISO 9001-2015, ISO 17025 (TÜRKAK).

E. RECORDS MANAGEMENT

- The contracted Laboratory is responsible to provide any reports when required by GOAL.
- The contracted Laboratory is responsible to keep analyzed samples for minimum 1-month.

F. BUSINESS REVIEW

GOAL implements a 6- month evaluation / review for contracted Service Provider.

Annex-1 LIST OF COMMODITIES

1	Fortified Wheat Flour	*Table 1*
2	Dry Yeast	*Table 2*
3	Bulgur	*Table 3*
4	Lentil (Whole & Red)	*Table 4*
5	Chickpeas	*Table 5*
6	Tomato Paste	*Table 6*
7	Olive Oil	*Table 7*
8	Sunflower Oil	*Table 8*
9	Canned Tuna	*Table 9*
10	Iodized Salt	*Table 10*
11	Vegetable Ghee	*Table 11*
12	Canned Chicken	*Table 12*
13	Dried Dates	*Table 13*
14	Dry Thyme	*Table 14*
15	Fruit Juice	*Table 15*
16	Jam	*Table 16*
17	Fava Beans	*Table 17*
18	Canned Vegetable	*Table 18*
19	Engine Oil	*Table 19*

Annex-2 REQUIRED ANALYSIS AND METHODS

Table: 1. Fortified Wheat Flour:

No	Tests	Requirements	Reference methods *(or equivalent validated methods)*
1.	Organoleptic	Pleasant smell; typical taste and color	
2.	Moisture content	Max. 14.0 %, w/w	ISO 712/ICC no. 110 /1
3.	Total Ash	Max. 0.65 % of dry matter	AOAC 923.03 ISO 2171 / ICC method 104/1
4.	Protein	Min. 11.0 % of dry matter	ISO 20483/ICC 105/1
5.	Zeleny index	Min. 30 ml	ICC 116 & 118 ISO 5529
6.	Delayed sedimentation	Min. Zeleny value + 5 ml	
7.	Hagberg Falling Number (HFN)	Min. 230 seconds (incl. 60 sec preparation)	ICC 107 ISO 3093
8.	Wet gluten	Min. 26 %	AACC 38-12A ICC No 155 ISO 21415-1
9.	Gluten index	Min. 85 %	ICC 155 AACC 38-12
10.	Fat acidity	Max. 50 mg KOH per 100 grams dry matter	ISO 7305 AOAC 939.05
11.	Vitamin A	Min. 1.0 mg/kg of flour	AOAC 992.04 AACC 86-03.01
12.	Iron	Min. 15 mg/kg of flour	AOAC 944.02 AACC 40-41.03

Table: 2. Dry Yeast:

Physical requirements		
Appearance and Colour		Separated granules of light brown colour
Taste/Smell (Free of off taste or smell)		Comply
Biological requirements		
The expiry date should not be less than one year		Comply
The fermentation power at the end of the year, after conserving in a temperature of 5-10°C		Minimum 1800 cm^3 of CO_2 per 3 hrs.
Foreign cells	Max	3%
Dead Cells **or** Cells that are able to resuscitate should be min 10 x 10^9 cfu per gram of dry matter	Max	3% Comply
Salmonella (per 25g)	Max	5/0/free
Coliform	Max	5/2/100/1000
Chemical requirements		
Moisture	Max	8%
Ash	Max	8.5%
Protein (based on dry matter)		40-46%
P2O5 (based on dry matter)		1.8-3.2 %

Table: 3. Bulgur:

No	Analyses/tests	Limit	Reference method (or equivalent)
1	Moisture	**13.0 %** max. *(by weight)*	ISO 712: 2009
2	Organoleptic	**Natural smell, taste and color**	Organoleptic examination
	Kernel Size		
3	- Over 2.5mm	**1.0% max.** *(by weight)*	
4	- Between 1.5mm- 2.5mm	**98.5% max.** *(by weight)*	
5	- Under 1.5mm	**0.5% max.** *(by weight)*	
6	Purity	**99.9% min.** *(by weight)*	Visual examination
7	Impurities	**0.1% max.** *(by weight)*	Visual examination
8	Scorched kernel (whole, or parts)	**0.2% max.** *(by weight)*	Visual examination
9	Ungelatinized kernels	**1.0% max**. *(by weight)*	Visual examination
10	Total ash	**1.75% max.** *(by weight, on dry basis)*	ISO 2171:2007
11	Ash insoluble in acid	**0.3% max.** *(by weight, on dry basis)*	ISO 5985:2002
12	Protein	**9.3% min.** *(by weight, on dry basis)*	AOAC 981.10 ISO 20483:2006
13	Crude fibres	**2.3% max.** *(by weight, on dry basis)*	AOAC 962.09
14	Mesophyllic aerobic bacteria	**10,000 cfu per g max.**	ICC No 125
15	Coliforms	**100 cfu per g max.**	AACC 42-11
16	Salmonella	**0 cfu per 25g max.**	AOAC 2005.03
17	Escherichia Coli	**<10 cfu per g max.**	AACC 42-25B
18	Yeasts and moulds	**1,000 cfu per g max.**	ICC No 146 AACC 42-50
19	GMO (*only if required*)	**Negative** (< 0.9% of GMO material)	

Table: 4. Lentil (Whole&Red):

No	Tests	Requirements	Reference methods (*or equivalent- Latest version*)
1	Organoleptic characteristic	Bright and clear appearance, Normal smell and colour	Organoleptic examination
2	Moisture	MAX. **14.0** %, m/m	ISO 24557
3	Other colour grains	MAX. **5.0** %, m/m	Visual examination
4	Insect damaged grains	MAX. **1.0** %, m/m	ISO 605
5	Other damaged grains *(Peeled, split, broken, immature, heated, sprouted, diseased...)*	MAX. **3.5** %, m/m	
6	Total damaged grains *(Insect damaged grains+ Other damaged grains)*	MAX. **3.5** %, m/m	
7	Inorganic matter	MAX. **0.2** %, m/m	
8	Filth	MAX. **0.1** %, m/m	
9	Live insects	Nil	
10	Dead insect (whole or fragment)	MAX. **10**/kg	
11	Toxic-noxious seeds	Free	
12	Total foreign matter *(Organic matter+ Inorganic matter+ Insects+ other impurities of animal origin)*	MAX. **1.0** %, m/m	
13	Size	As per contractual agreement	
14	Varieties *(only if required)*	As per contractual agreement	
15	Total aflatoxin (B1+B2+G1+G2) *(only if required)*	MAX. **20.0** ppb	ISO 16050
16	GMO *(only if required)*	< 0.9 % of GMO material in total lentil DNA	Quantitative PCR- ISO 21570

Table: 5. Chickpeas:

No	Tests	Requirements	Reference methods (*or equivalent- Latest version*)
1	Organoleptic characteristic	Bright and clear appearance, Normal smell and colour	Organoleptic examination
2	Moisture	MAX. **14.0** %, m/m	ISO 24557
3	Other colour chick peas	MAX. **5.0** %, m/m	Visual examination
4	Insect damaged chick peas	MAX. **1.0** %, m/m	ISO 605
5	Other damaged chick peas (Peeled, split, broken, immature, discoloured. mouldy...)	MAX. **4.0** %, m/m	
6	Total damaged chick peas (Insect damaged grains+ other damaged grains)	MAX. **4.0**%, m/m	
7	Inorganic matter	MAX. **0.2** %, m/m	
8	Filth	MAX. **0.1** %, m/m	
9	Live insect	Nil	
10	Dead insect (whole or fragment)	MAX. **3**/kg	
11	Toxic-noxious seeds	Free	
12	Total foreign matter (Organic matter+ Inorganic matter+ Insects+ other impurities of animal origin)	MAX. **1.0** %, m/m	
13	Size: ≥ 6 mm diameter	MIN. **95.0** % m/m	
14	Size: < 6 mm diameter	MAX. **5.0** % m/m	
15	Total aflatoxin (B1+B2+G1+G2) *(only if required)*	MAX. **20.0** ppb	ISO 16050
16	Varieties *(only if required)*	As per contractual agreement	ISO 605
17	GMO *(only if required)*	Negative (< 0.9% of GMO material)	ISO 21570

Table: 6. Tomato Paste:

N°	Specifications	Recommended value	Reference method*
1	Organoleptic	Normal/typical taste and odor. Absence of burnt taste, fermented taste and smell.	
2	Concentration (Brix)	28% minimum	
3	Consistency by Bostwick (at 12 Brix, at 300C)	4-11 cm/30s	
4	Colour (at 12 Brix)	2 minimum Gardner Color Scale	
5	pH	4.5 maximum	AOAC 981.
6	Acidity	7% maximum	
7	Sugar (at dry matter)	42% minimum	
8	Salt	2% maximum	ISO 3634:1979
9	Total Coliform	10 cfu/g maximum	
10	Escherichia Coli	Absent	
11	Salmonella	Absent	
12	Staphylococcus aureus	Absent	
13	Lysteria monocytogenes	Absent	
14	Bacillus cereus	50 cfu per g maximum	
15	Howard mould count	60% maximum	AOAC 965.41

** or equivalent*

Table: 7. Olive Oil:

No.	Tests	Requirements	Reference methods (latest versions) [3]
1	Organoleptic characteristics	- Colour, odour and taste must be characteristic of the designated product - Free from foreign and rancid odour and taste	Organoleptic examination
2	Moisture and volatile matter	*MAX.* 0.2 %, m/m	ISO 662
3	Insoluble impurities	*MAX.* 0.1 %, m/m	ISO 663
4	Halogenated solvents	*MAX.* 0.2 mg/kg	ISO 16035
5	Free acidity	*MAX.* 1.0 %, m/m, expressed as oleic acid	ISO 660
6	Wax	*MAX.* 250 mg/kg	ISO/TS 23647
7	Absorbency in ultra-violet (at 270 nm)	*MAX.* 0.25	ISO 3656
8	Peroxide value	*MAX.* 20.0 milliequivalents of active oxygen/kg oil	ISO 3960
9	Saponification value	184 - 196 mg KOH/g oil	ISO 3657
10	Iodine value	75-94 g/100g oil	ISO 3961
11	Unsaponifiable matter	*MAX.* 1.5 % m/m	ISO 18609
12	Refractive index (ND 20°C)	1.4677-1.4705	ISO 6320
13	Relative density (20°C /water at 20°C)	0.910 - 0.916	AOCS 10c-95
14	Iron	MAX. 3.0 mg/kg	ISO 8294
15	Copper	MAX. 0.1 mg/kg	
16	Total sterols	MIN. 1000mg/kg	COI/T.20/ Doc. No 26
17	Vitamin A	24000 - 36000 IU/kg oil	AOAC 2001.13
18	Vitamin D	2400- 3600 IU/kg oil	AOAC 2002.05

Table: 8. Sunflower Oil:

N°	Test	Recommended value	Reference method or equivalent validated methods
1	Organoleptic	The color, odor and taste of product shall be characteristics of the designated product. It shall be free from foreign and rancid odor and taste.	Organoleptic evaluation
2	Moisture and volatile matter at 105°C	0.2% maximum (m/m)	ISO 662:2016; AOCS Ca 2d-25; IUPAC 2.601
3	Insoluble impurities	0.05% maximum (m/m)	ISO 663:2017; AOCS Ca 3a-46; IUPAC 2.604
4	Free fatty acid	0.15% maximum expressed as oleic acid	ISO 18395:2005; AOCS Ca 5a-40; AOAC 940.28
5	Acid value	0.6 mg maximum of KOH/g oil	ISO 660:2009; AOCS Cd 3d-63
6	Color	5-1/4 inch Lovibond cell Red: 1.5 maximum Yellow: 15 maximum	AOCS Cc 13b-45; BS 684-1.14:1998; ISO 27608:2010
7	Soap content	0.005% maximum	AOCS Cc 17-95 BS 684 Section 2.5
8	Peroxide value	2 milliequivalents maximum of active oxygen per kg of oil (*at time of purchase*) 10 milliequivalents maximum of active oxygen per kg of oil (*throughout shelf life*)	ISO 3960:2017 BS 684-2.14:2001 AOCS Cd 8b-90 AOAC 965.33; IUPAC 2.501
9	Saponification	188-194 mg KOH/g oil	ISO 3657:2013; AOCS Cd 3-25
10	Iodine value	118-141 g/100g oil	ISO 3961:2018; AOAC 993.20 AOCS Cd 1d-92; IUPAC 2.205
11	Unsaponifiable matter	1.5% maximum	ISO 18609:2000; ISO 3596:2000 AOCS Ca 6a-40; IUPAC 2.401
12	Refractive index (ND 40°C)	1.461 – 1.468	ISO 6320:2017; AOCS Cc 7-25; AOAC 921.08; IUPAC 2.102
13	Relative density (20°C /water at 20°C)	0.918 – 0.923	AOCS 10c-95 IUPAC 2.101
14	Vitamin A	24000– 36000 IU per kg oil	EN 12823-1:2014
15	Vitamin D	2400 – 3600 IU per kg oil	EN 12821:2009

Vitamin A *Country Specific Requirement*	*Senegal*	53300-80000 IU per kg oil (16-24 mg/kg)	EN 12823-1:2014
	Mauritania	Min. 67000 IU per kg oil (20 mg/kg)	

Table: 9. Canned Tuna:

No	Parameter	Reference method *(or equivalent)*
Compulsory tests		
1	Organoleptic (texture, color, smell, taste)	CAC-GL31-1999
2	Type (Skin-on, skinless; Chunk, Flake, grated)	Visual examination
3	Net weight	CODEX 119 - 1981, Rev.1-1995
4	Drained weight	CODEX 119 - 1981, Rev.1-1995
5	Can size and weight	Can manufacturer specifications
6	Total Coliform	BS 5763:1991 Part 2
7	Escherichia Coli	AOAC 966.23B BS 5763:1991 Part 8
8	Salmonella	ISO 6579
9	Staphylococcus aureus	AOAC 975.55
10	Lysteria monocytogenes	AOAC 993.09 AOAC 994.03
11	Mercury (Hg)	AOAC 977.15
12	Cadmium (Cd)	AOAC 945.58
13	Lead (Pb)	AOAC 972.23
14	Inorganic Arsenic (As)	AOAC 986.15
15	Tin (Sn)	AOAC 985.16
16	Melamine	ELISA AgraQuant® kit. Romer Labs. http://www.romerlabs.com/pdts_kits.htm
17	Para red	HPLC or LC-MS/MS
18	Rhodamine	HPLC or LC-MS/MS
19	Sudan red dyes (I, II, II and IV)	HPLC or LC-MS/MS
20	Histamine	AOAC977.13
		TOTAL (compulsory)

Table: 10. Iodized Salt:

No	Parameter/Test	Requirements	Analytical method (or equivalent validated method)
1.	Organoleptic	- Normal smell - Colour: white - 10g of salt in 100ml water shall give a colourless solution having a neutral reaction	
2.	Particle size	- min 85 % pass through 1.00 mm sieve - max 20 % pass through 0.212 mm sieve Or: as per contract requirement	
3.	Sodium chloride (NaCl)	Min 97.0 % (m/m, on dry matter) Or: as per contract requirement	ISO 2481
4.	Moisture content (drying at 110 °C)	Max 3.0 % (m/m) Or: as per contract requirement	ISO 2483
5.	Water insoluble matter	Max 0.2 % (m/m)	ISO 2479
6.	Iodine	39.0 – 65.0 mg/kg *(Based on estimated salt consumption 3-5g per day, WHO 2014 Guidelines)* Or: as per contract requirement	EuSalt/AS 002 EuSalt/AS 019 WHO/UNICEF/ICCIDD method[5]
7.	Acid insoluble matter	Max 0.15 % (m/m)	ISO 2479
8.	Sulphate (as SO4)	Max 0.5 % (m/m)	ISO 2480 EuSalt/AS 015 EuSalt/AS 018
9.	Arsenic (As)	Max 0.5 mg/kg	EuSalt/AS 015
10.	Copper (Cu)	Max 2.0 mg/kg	EuSalt/AS 015
11.	Lead (Pb)	Max 1.0 mg/kg	EuSalt/AS 013 EuSalt/AS 015
12.	Cadmium (Cd)	Max 0.5 mg/kg	EuSalt/AS 014 EuSalt/AS 015
13.	Mercury (Hg)	Max 0.1 mg/kg	EuSalt/AS 012 EuSalt/AS 015

Table: 11. Vegetable Ghee:

N°	Specification	Recommended value	Reference methods
1	Taste	Neutral/bland taste; absence of foreign odours and flavours	
1	Moisture and volatile matter	0.1% maximum	ISO 662:1998 AOCS Ca 2c-25 IUPAC 2.601
2	Free fatty acid	0.1 % maximum expressed as palmitic acid	ISO 18395:2005 AOCS Ca 5a-40 AOAC 940.28
3	Color	5 ¼ Lovibond 3 red, 30 yellow max	AOCS Cc 13b-45 BS 684-1.14:1998
5	Peroxide value	3 milliequivalents maximum of active oxygen per kg of oil	ISO 3960:2007 BS 684-2.14:2001 AOCS Cd 8-53 AOAC 965.33 IUPAC 2.501
6	Iodine value (Wijs)	50 - 55 g per 100g	ISO 3961:2009 AOAC 993.20 IUPAC 2.205
7	Slipping point	39°C maximum	AOAC 920.156 ISO 6321:2002
8	Saponification	190 - 209 mg KOH per g	ISO 3657:2002 AOCS Cd 3-25
9	Unsaponifiable matter	1.3% maximum	ISO 18609:2000 ISO 3596:2000 AOCS Ca 6a – 40 IUPAC 2.401
10	Vitamin A	24,000– 36,000 IU per kg	
11	Vitamin D	2,400 – 3,600 IU per kg	

Table: 12. Canned Chicken:

No	Parameter	Reference method *(or equivalent)*
Compulsory tests		
1	Tin (Sn)	AOAC 985.16
2	Lead (Pb)	AOAC 934.07
3	Staphylococcus aureus	AOAC 980.31
4	Salmonella	ISO 6579
5	E. Coli	AOAC 991.14
6	Fat	ISO 1443
7	Salt	ISO 2481
8	Nitrite, potassium and/or sodium salts	ISO/DIS 2918
9	Ascorbic acid	AOAC 985.33
10	Phosphate (natural + added)	ISO 13730
		TOTAL (compulsory)

Table: 13. Dried Dates:

No	Parameter	**Reference method** *(or equivalent)*
Compulsory tests		
1	Size	Visual examination
2	Pit	Visual examination
3	Moisture	ISO 24557
4	Mineral impurities	Visual examination
5	Blemishes	Visual examination
6	Damaged dates	Visual examination
7	Unripe Dates	Visual examination
8	Unpollinated Dates	Visual examination
9	Dirt	Visual examination
10	Insects and mites	Visual examination
11	Scouring	Visual examination
12	Mould	Visual examination
13	Decay	Visual examination
14	Live insect	Visual examination
15	Organoleptic quality	Organoleptic examination
16	Varieties	Visual examination
		TOTAL (compulsory)

Table: 14. Dry Thyme:

No	Parameter	**Reference method** *(or equivalent)*
Compulsory tests		
1	Strong aroma and flavour	Physical method
2	Free of live insects or fungi	Physical method
3	Percantage of allowed foreign bodies	Physical method
4	Percantage of thyme	Physical method
5	Percantage of sumac	Physical method
6	Moisture	TS 2134
7	Total Ash based on dry matter (m/m)	TS 2131 ISO 928
8	Ash insoluble in Acid based on dry matter (m/m)	TS 2133 ISO 930
9	Raw fibres	TS 4966
10	Total Aflatoxins (B1, B2, G1, G2)	AOAC 991.31
11	Aflatoxin B1	(included in no.1368)
12	Total Plate count	TS EN ISO 4833-1
13	Coliform	ISO 4832
14	E.Coli	APHA 4th ed. ch.8
15	Salmonella	ISO 16649-2
16	Shigella	TS EN ISO 6579
17	Arizona	ISO 21567
18	Yeast & Moulds	ISO 6579
19	Pesticides Residues should be within the International acceptable limits for human consumption	ISO 21527-2
		TOTAL (compulsory)

Table: 15. Fruit Juice:

No	Parameter	Reference method *(or equivalent)*
Compulsory tests		
1	Patulin	ISO 8128-1 or 2
2	Dissolved solid matter	AOAC 22.019
3	Taste, Odor and Color	Organoleptic examination
4	Impurities	Visual examination
5	Salt	ISO 3634
6	Volatile Acid (reference to acetic acid)	IFJU no 12 of 1968
7	Vitamin C (ascorbic acid)	AOAC of 43.061 - 43.064
8	pH	ISO 1842
9	As	ISO 17239
10	Tin	AOAC 985.16
11	SO2	IFJU Method No. 7, 1968
12	Pb	ISO 6633
13	Cu	AOAC 999.1
14	Zn	AOAC 999.1
15	Fe	AOAC 999.1
16	Salmonella	ISO 6579
17	Enterobacteriaceae	ISO 21528-2
		TOTAL (compulsory)

Table: 16. Jam:

No	Parameter	Reference method *(or equivalent)*
Compulsory tests		
1	Organoleptic quality	Organoleptic examination
2	Defect	Organoleptic examination
3	Solulable solids content	AOAC 932.14C ISO 2173
4	Minimum Fill	CAC/RM 46-1972
5	Salmonella	ISO 6579
6	Enterobacteriaceae	ISO 21528-2
7	Type of fruits	Organoleptic
		TOTAL (compulsory)

Table: 17. Fava Beans:

No	Parameter	**Reference method** *(or equivalent)*
Compulsory tests		
1	Packaging	Visual examination
2	Color, size and other grains	Visual examination
3	Smell, color and taste of product	Organoleptic examination
4	Foreign materials, impurities and broken parts	Visual examination
5	Cooking and shape	Visual examination
6	Size and other grains	Visual examination
7	Industrial colors	TS 2664
8	EDTA	USP
9	Dark part in the surface	Visual examination
10	Drained weight	AOAC 968.30
11	Kernels damaged by Insects	Visual examination
12	Food Salt	ISO 3634
13	Pb	ISO 11212-1, 2, 3, 4
14	Fe	AOAC 999.11
15	Cu	AOAC 999.11
16	As	ISO 11212-1, 2, 3, 4
17	Acidity (Citric acid Based)	ISO 7305
18	Total plate count	AOAC 990.12
		TOTAL (compulsory)

Table: 18. Canned Vegetable:

No	Parameter	**Reference method** *(or equivalent)*
Compulsory tests		
1	Organoleptic characteristics	Organoleptic examination
2	Minimum fill	ISO 90-1 ISO 90-2
3	Drained weight	AOAC 968.30
4	PEAS: Blemished peas	Visual examination, weighing
5	PEAS: Seriously blemished peas	Visual examination, weighing
6	PEAS: Pea fragments	Visual examination, weighing
7	PEAS: Yellow peas	Visual examination, weighing
8	PEAS: Extraneous plant material	Visual examination, weighing
9	PEAS: Total above defects	Visual examination, weighing
10	CARROT: Blemished carrots	Visual examination, weighing
11	CARROT: Mechanical damage	Visual examination, weighing
12	CARROT: Malformations	Visual examination, weighing
13	CARROT: Unpeeled parts (30% or more of the surface is unpeeled)	Visual examination, weighing
14	CARROT: Fibrous	Visual examination, weighing
15	CARROT: Black or dark green collar	Visual examination, weighing
16	CARROT: Extraneous plant material	Visual examination
17	Lead	ISO 6633
18	Tin	AOAC 985.16
19	Size of peas (if required)	Visual examination
20	Type of carrot (if required)	Visual examination
		TOTAL (compulsory)

Table: 19. Engine Oil:

Engine Oil Specs and testing methods				
No	**Properties**	**Test method**	**MIN**	**MAX**
1	SAE Viscosity Class	-		20W-50
2	Viscosity (Cst) @ 100 °C	ASTM D 445	16.3	21.9
3	Viscosity index	ASTM D 2270	120	-
4	Viscosity (cp) @ -15 °C	ASTM D 5293	-	9500
5	Pour point	ASTM D 97	-	-23 °C
6	Flash point	ASTM D 92	220	-
7	Total Base Number (T.B.N) (mg KOH / g)	ASTM D 2896	9.9	-
8	Sulphated Ash %Wt.	ASTM D 874	-	1.8
9	Copper Strip Corrosion 3hrs/100° C	ASTM D 130	-	2a
10	Foaming Tendency /Stability	ASTM D 892	-	10/50/10
11	Evaporation Loss (Weight loss after(1hrs) at 250C°	ASTM D 5800	-	16%
12	Zinc Content %Wt. max	ASTM D 4628	-	0.1