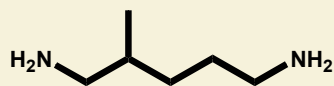


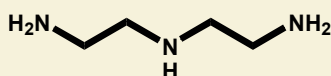
# Epoxy Coatings: Curing with DYTEK® A amine vs. DETA

Strong. Speedy. Sleek.

The methyl-branched, 5-carbon chain of DYTEK® A amine has two primary amines which exhibit differential reactivity. DYTEK® A amine is used in polyamide resins, hot melt adhesives, polyurethanes and epoxies. DYTEK® A amine is preferred for epoxy coatings when used as a formulated adduct and is particularly useful in the preparation of concrete sealers, glossy decorative floor coatings, flexible coatings, and outdoor applications where fast curing is desired.



DYTEK® A amine  
(2-methylpentamethylenediamine)



DETA  
(Diethylenetriamine)



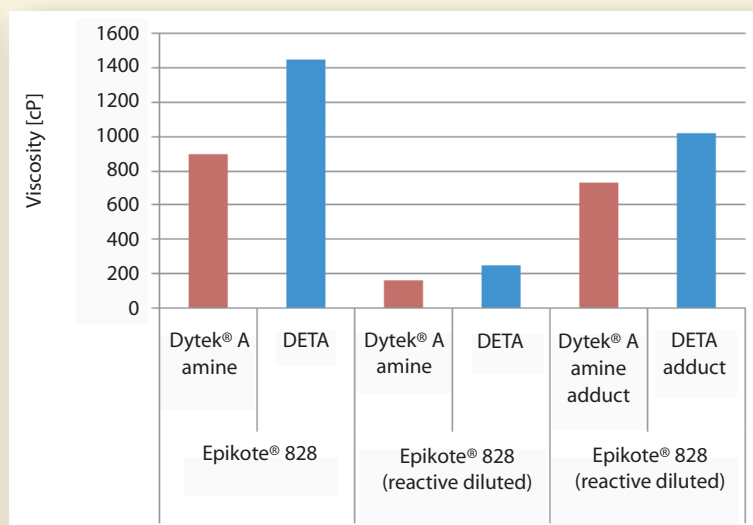
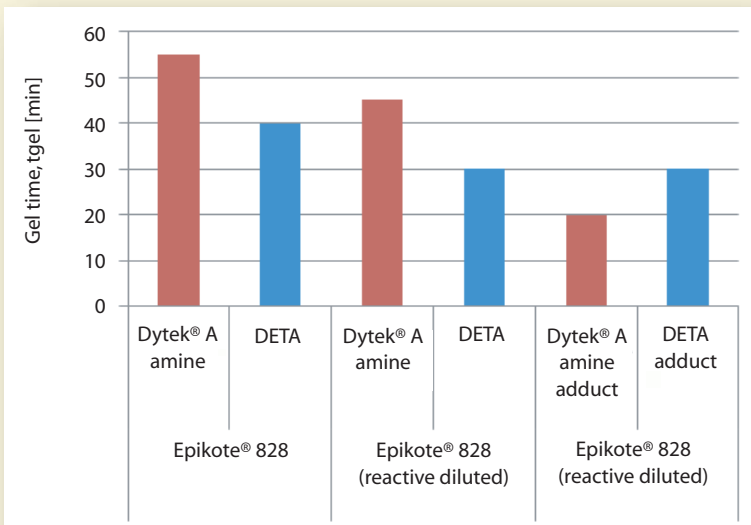
## Coating cured with DYTEK® A amine:

- Low temperature curing and fast curing
  - Allows coating application under adverse environmental conditions and provides fast drying time
- High toughness with increased flexibility
  - Incorporates flexibility into coatings to minimize crack formation

## During processing:

- Low viscosity and low adduct viscosity for improved flow and leveling

**Dytek**®



| Formula  | Series A                                      |      | Series B   |      | Series C                                     |                          |
|--|---|------|--|------|--|--------------------------|
| Resin  | Epikote® 828                                  |      | Epikote® 828 (Reactive diluted) <sup>1</sup>   |      | Epikote® 828 (Reactive diluted) <sup>1</sup> |                          |
| Amine  | DYTEK® A amine                                | DETA | DYTEK® A amine   | DETA | DYTEK® A amine adduct <sup>2</sup>           | DETA adduct <sup>2</sup> |
| Viscosity <sup>3</sup> , cP                    | 900   | 1450 | 160  | 250  | 730  | 1020                     |
| Potlife <sup>4</sup> , t <sub>40°C</sub> , min | 37  | 20   | 20   | 15   | 7  | 10                       |
| Gel Time <sup>5</sup> , t <sub>gel</sub> , min | 55  | 40   | 45   | 30   | 20   | 30                       |
| <b>Chemical Resistance</b>                     | % weight gain after 4 weeks immersion at 23°C |      |  |      |  |                          |
| Demineralized Water                            | -0.17   | 0.17 | 0.29   | 0.14 | 1.11   | 1.20                     |
| 10% Sodium Hydroxide                           | 0.66  | 0.95 | 0.87   | 0.88 | 1.54   | 1.67                     |
| 10% Hydrochloric Acid                          | 1.56  | 1.81 | 4.41   | 2.61 | 5.63   | 3.45                     |
| 10% Acetic Acid                                | 7.44  | 1.83 | 12.52  | 4.24 | 30.89  | 8.96                     |
| Gasoline (DIN 51600)                           | 0.20  | 0.48 | 0.20   | 0.39 | 0.70   | 0.57                     |
| Xylene   | 0.22  | 0.48 | 0.25   | 0.42 | -0.54  | 0.53                     |
| <b>Mechanical properties</b>                   |   |      |  |      |  |                          |
| Tg(DSC), 2nd run, °C                           | 115   | 136  | 83   | 95   | 43   | 60                       |
| Tg(DSC), 1st run, °C                           | 97  | 117  | 81   | 89   | 38   | 58                       |
| HDT, °C  | 84.2  | 90   | 59.8   | 78.7 | 34.7   | 42.2                     |
| Shore D  | 78  | 84   | 78   | 82   | 78   | 82                       |
| Charpy, KJ/m <sup>2</sup>                      | 14.5  | 17   | <sup>1</sup> The Bisphenol A resin Epikote® 828 is modified with reactive diluent Grilonit® RV 1812.<br><sup>2</sup> These adducts were prepared by reacting each diamine with Epikote® 828 resin in benzyl alcohol using a 5:1 molar ratio of diamine to resin.<br><sup>3</sup> Viscosity was measured immediately after mixing the resin and amine.<br><sup>4</sup> Gel time: Time for a 120 mL sample at 23°C to reach the gel point.<br><sup>5</sup> Pot life: Time for a 100 mL sample at 23°C to reach 40°C. |      |  |                          |
| Izod, KJ/m <sup>2</sup>                        | 18.5  | 16   |  |      |  |                          |
| Flexural Strength, MPa                         | 102   | 116  |  |      |  |                          |
| Elasticity Modulus, MPa                        | 2550  | 2890 |  |      |  |                          |
| Tensile Strength, MPa                          | 69  | 81   |  |      |  |                          |
| Elongation @ Break, %                          | 6.6   | 7    |  |      |  |                          |

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