

Technical Data Sheet

EPIKURE™ Curing Agent 3061

Product Description

EPIKURE Curing Agent 3061, an aliphaticamidoamine, is of the same class as EPIKURE Curing Agents 3055 and 3046 but provides a longer pot life and is less exothermic when used in applications requiring thick sections. Epoxy resins cured with EPIKURE Curing Agent 3061 develop slightly more flexibility than corresponding systems cured with EPIKURE Curing Agents 3055 or 3046.

Benefits

- Low viscosity
- Immediate compatibility with epoxy resins
- Long working life
- Variable combining ratio

Sales Specifications

| Property | Value | Unit | Test Method |
|-------------------|-----------|---------|-------------|
| Amine Value | 313 - 330 | mg/g | ASTMD2896 |
| Color | <13 | Gardner | ASTMD1544 |
| Viscosity at 25°C | 220 - 430 | cP | ASTMD2196 |

Typical Properties

| Property | Value | Unit | Test Method |
|-------------------|-------|---------|-------------|
| Density @ 25°C | 7.77 | lbs/gal | ASTMD1475 |
| Equivalent Weight | 115 | | |

Performance Properties

Table 1 / Reactivity of Epoxy Systems Using EPIKURE Curing Agent 3061

| | Units | A | B | C | D |
|---------------------------|-------|-----|-----|------|-----|
| EPON™ Resin 828 | pbw | 100 | 100 | 100 | --- |
| EPON Resin 813 | pbw | --- | --- | --- | 100 |
| EPIKURE Curing Agent 3061 | pbw | 55 | 65 | 80.5 | 65 |

Handling Properties @ 25°C

Gel time

| | hrs | 7 ¾ | 7 ½ | 8 | 11 |
|---------|-----|-----|-----|-----|-----|
| ¼-pint | hrs | 7 ¾ | 7 ½ | 8 | 11 |
| 1-pint | hrs | 4 | --- | --- | --- |
| 1-quart | hrs | 2 ¾ | --- | --- | --- |

Peak exotherm

| | °C | 37 | 37 | 37 | 34 |
|---------|----|-----|-----|-----|-----|
| ¼-pint | °C | 37 | 37 | 37 | 34 |
| 1-pint | °C | 104 | --- | --- | --- |
| 1-quart | °C | 167 | --- | --- | --- |

Table 2 / Epoxy Systems Cured with EPIKURE Curing Agent 3061

| Composition | Method | Units | A | B | C ¹ | D | E |
|---------------------------|--------|-------|-----|-----|----------------|-----|-----|
| EPON Resin 828 | | pbw | 100 | 100 | 100 | --- | 100 |
| EPON Resin 813 | | pbw | --- | --- | --- | 100 | --- |
| EPIKURE Curing Agent 3061 | | pbw | 55 | 65 | 80.5 | 65 | 65 |

Handling Properties @ 25°C

| | cP | 1,250 | 1,100 | 990 | 475 | 1,100 |
|-----------|----|-------|-------|-----|-----|-------|
| Viscosity | cP | 1,250 | 1,100 | 990 | 475 | 1,100 |

EPIKURE Curing Agent 3061
<https://www.hexion.com/en-US/product/epikure-curing-agent-3061>

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| Composition | Method | Units | A | B | C ¹ | D | E |
|-------------------------|--------|-------|-----|-----|----------------|----|-----|
| Gel time, 100 gram mass | | hrs | 7 ¼ | 7 ½ | 8 | 11 | 7 ½ |

| Cured State Properties ² | | | | | | | |
|-------------------------------------|-----------|-------------|--------|--------|--------|--------|--------|
| HDT | ASTM D648 | °C | --- | 50 | --- | --- | 64 |
| Tensile strength | ASTM D638 | psi | 7,100 | 6,780 | 6,150 | 3,410 | 6,720 |
| Tensile elongation at break | | % | 8.5 | 7.5 | 14 | 68 | 6.5 |
| Flexural strength | ASTM D790 | psi | 12,100 | 12,050 | 9,250 | 4,680 | 10,300 |
| Initial flexural modulus | | ksi | 340 | 340 | 250 | 90 | 360 |
| Izod impact, notched | ASTM D256 | ft.·lb./in. | 0.92 | 1.15 | 1.61 | 0.59 | 1.48 |
| Hardness | Shore D | | 81 | 80 | 77 | 74 | 81 |
| Water absorption ³ | | % | 0.24 | 0.27 | 0.39 | 0.39 | 0.36 |
| Linear shrinkage ⁴ | | inch/in | 0.0006 | 0.0007 | 0.0015 | 0.0015 | --- |

Electrical Properties

| | | | | | | | |
|----------------------------------|-----------|--------|------------------------|------------------------|------------------------|------------------------|-------------------------|
| Dielectric constant ⁵ | ASTM D150 | | 3.37 | 3.44 | 3.25 | 3.20 | 3.33 |
| Dissipation factor ⁵ | | | 0.011 | 0.012 | 0.013 | 0.013 | 0.017 |
| Volume resistivity | | | | | | | |
| at 25 °C | | ohm·cm | 2.8(10 ¹⁵) | 4.2(10 ¹⁵) | 4.8(10 ¹⁵) | 1.7(10 ¹³) | 3.8(10 ¹⁵) |
| at 66 °C | | ohm·cm | 2.3(10 ¹²) | 2.6(10 ¹²) | 1.8(10 ¹²) | 7.8(10 ¹³) | 6.8(10 ¹²) |
| at 93 °C | | ohm·cm | 1.5(10 ¹¹) | 7.6(10 ¹⁰) | 2.0(10 ¹⁰) | <10 ⁹ | <2.1(10 ¹⁰) |
| at 130 °C | | ohm·cm | 4.1(10 ⁹) | <10 ⁹ | <10 ⁹ | <10 ⁹ | <10 ⁹ |

¹ Equal volume combining ratio.

² Determined on 1/8" thick test specimens at 25 °C. Systems A, B, C, and D were cured two weeks at 25 °C. System E was cured for 16 hours at 25 °C followed by 2 hours at 100 °C.

³ Percent weight gain after 24 hours immersion at 25 °C.

⁴ ERF-12-64, mold size #1 (195 ml).

⁵ Tested at 106 Hertz.

General Information

By using EPIKURE Curing Agent 3061 to crosslink an epoxy resin, extended pot life is attained. Handling strength of the formulation is generally reached after curing 24 hours at room temperature. Ultimate performance properties develop after curing for 3 to 4 days at room temperature. For complete cure, systems should be allowed to cure for 2 weeks at room temperature. The gel times, maximum exothermic temperatures and performance properties for several formulations are presented in Table 1.

To minimize the exothermic temperature rise in cast sections of thicknesses greater than 4 inches, less than stoichiometric levels of EPIKURE 3061 are recommended. The stoichiometric level of EPIKURE 3061 for EPON™ Resin 828 is 5phr; therefore 40 to 55phr of the curing agent should be used.

Optimum properties are obtained at 55 parts of EPIKURE Curing Agent 3061 per 100 parts of an unmodified epoxy resin such as EPON 828 when cured at room temperature. Elevated temperature post cure improves the heat deflection temperature, but other properties are as good or slightly better with a room temperature cure. At an equal volume combining ratio, EPIKURE Curing Agent 3061 provides a better overall balance of properties than either EPIKURE Curing Agents 3055 or 3046. The effects of curing agent level, reactive diluents and cure schedule on properties are summarized in Table 2.

Safety, Storage & Handling

Please refer to the MSDS for the most current Safety and Handling information.

Please refer to the Hexion web site for Shelf Life and recommended Storage information.

This curing agent product may crystallize after extended storage times. It can be reconstituted by gentle warming of the entire container and its contents to approximately 80°C (176°F) until all visual evidence of crystallization has gone away. Upon cooling to normal ambient temperature conditions the product will regain its original liquid state physical properties.

EPIKURE Curing Agent 3061 should be stored in tightly sealed containers, in a dry location at normal room temperature. Exposure to moisture causes an increase in viscosity and reactivity, the degree of increase depending upon the amount of moisture which has been absorbed.

Exposure to these materials should be minimized and avoided, if feasible, through the observance of proper precautions, use of appropriate engineering controls and proper personal protective clothing and equipment, and adherence to proper handling procedures. None of these materials should be used, stored, or transported until the handling precautions and recommendations as stated in the Material Safety Data Sheet (MSDS) for these and all other products being used are understood by all persons who will work with them. Questions and requests for information on Hexion Specialty Chemicals, Inc. ("Hexion") products should be directed to your Hexion sales representative, or the nearest Hexion sales office. Information and MSDSs on non-Hexion products should be obtained from the respective manufacturer.

Packaging

Available in bulk and drum quantities.

Contact Information

For product prices, availability, or order placement, please contact customer service:

www.hexion.com/Contacts/

For literature and technical assistance, visit our website at www.hexion.com

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