

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
<http://www.westlakeepoxy.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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