

Technical Data Sheet

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EPIKURE™ Curing Agent 3270

Product Description

EPIKURE™ Curing Agent 3270, a modified aliphatic amine, is designed to rapidly cure thin sections of epoxy resin formulations at temperatures of 60 °F (15 °C) and above. EPIKURE 3270 is of special interest for decorative flooring and high-build coating applications because 100 percent reactive formulations of this type cure rapidly to clear, tough, mar-resistant films over a wide ambient temperature and relative humidity range. High-build floor coatings have been applied in one day and opened to traffic after an overnight cure period. Additionally, EPIKURE Curing Agent 3270 is well suited for fast setting equal volume adhesives.

Application Areas/Suggested Uses

- Adhesives
- Flooring

Benefits

- Light color
- Good mar resistance
- Resistance to amine carbonate formation (“blush”, “bloom” or “sweat-out”)
- Convenient combining ratios

Sales Specification

Property	Units	Value	Test Method/Standard
Amine as KOH	mg/g	313 – 337	ASTM D2896
Viscosity at 25°C	cP	4,000 – 7,000	ASTM D2196
Color	Gardner	2 max.	ASTM D1544

Typical Properties

Property	Units	Value	Test Method/Standard
Equivalent weight, approx.		142	
Pounds/gallon @ 25 °C	lbs/gal	8.07	ASTM D1475
Flash Point	°F	>200	Setaflash

General Information

The useful combining ratio range of EPIKURE Curing Agent 3270 is 60 to 100 parts per 100 parts resin when used with an unmodified liquid epoxy resin such as EPON™ Resin 828. Equal volume proportions are 83 parts per 100 parts resin.

The gel time of an EPON 828/EPIKURE 3270 system is approximately 6 minutes for a 100-gram mass at 77 °F (25 °C). Thinner sections permit longer working life; for example, 1/8-inch thick “puddles” may be used to extend application time in decorating and are workable for approximately 25 minutes. For 2-mil thick coatings, tack-free cure is obtained in approximately 2 hours at 25 °C.

Aliphatic polyglycidyl ethers such as HELOXY™ Modifiers 32, 67 and 48 are useful flexibilizers and reactive diluents for formulations cured with EPIKURE Curing Agent 3270. These modifiers contribute a better balance of reactivity, strength and toughness than do monoepoxide diluents. Using HELOXY Modifier 48 or other high functionality resins provides maximum reactivity. The large variation in epoxide equivalent weights between EPON 828 and most aliphatic polyglycidyl ethers necessitates an adjustment in combining ratios when these modifiers are incorporated.

EPIKURE Curing Agent 3270 is compatible in all proportions with other aliphatic polyamines, including EPIKURE Curing Agents 3295, 3125, 3055, 3046, and 3274. Blending with EPIKURE Curing Agent 3274 achieves intermediate reactivities with no sacrifice in resistance to amine carbonate formation “sweat-out”. The compatibility of EPIKURE 3270 with coal tar and petroleum derived extenders is notably high.

Performance Properties

Table 1 / Properties of Systems Cured with EPIKURE Curing Agent 3270

	<u>Method</u>	<u>Units</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
EPON™ Resin 828		pbw	100	100	90	100
HELOXY™ Modifier 8		pbw	---	---	10	---
EPIKURE Curing Agent 3270		pbw	75	13	45	75
EPIKURE Curing Agent 3274		pbw	---	33	15	---
Handling Properties @ 25°C						
Viscosity		cP	5,800	---	---	5,800
Gel Time						
100 gram mass		minutes	6	34	15	6
1/8 inch thick		minutes	38	---	65	38
Tack-Free Time						
0.003-inch thickness at 25 °C		hours	2	16-24	5	2
0.003-inch thickness at 10 °C		hours	18	---	---	18
Film Clarity			clear	clear	clear	clear
Cure Schedule		wk/°C	2/25	2/25	2/25	2/25
Cured State Properties ¹						
Heat Deflection Temperature	ASTM D648	°C	56	64	40	60

Tensile Strength	ASTM D638	psi	8,870	8,300	6,200	7,800
Tensile Elongation at break		%	2	1.9	15	2
Compressive Strength, ultimate		psi	15,300	---	19,800	13,300
Compressive Strength, Yield		psi	---	---	9,500	---
Izod impact, notched	ASTM D256	ft. • lb./in.	0.42	0.44	0.98	0.40
Hardness		Shore D	83	82	80	82

Chemical Resistance

Water absorption ²		%	0.20	0.14	0.27	0.36
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Electrical Properties

Volume resistivity

at 25 °C		ohm•cm	4.1 x 10 ¹⁴	---	---	4.7 x 10 ¹⁴
at 66 °C		ohm•cm	2.3 x 10 ¹¹	---	---	6.0 x 10 ¹¹
at 93 °C		ohm•cm	1.7 x 10 ⁹	---	---	9.4 x 10 ⁹
at 130 °C		ohm•cm	<10 ⁹	---	---	<10 ⁹

¹ Determined on 1/8" thick test specimens at 25 °C. Systems A through D were cured for 2 weeks at 25 °C.

² Percent weight gain after immersion for 24 hours at 25 °C.

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.

To preserve product quality and prevent discoloration, it is recommended that a nitrogen blanket be maintained on the headspace of an opened container and that storage / handling temperatures in excess of 50°C (122°F) be avoided. Spillage around the opening of the container from dispensing operations will form a crystalline residue. This residue is not soluble in the curing agent nor the resin, and certain measures should be taken to prevent it from contaminating the remaining contents of the container. The crystalline residue should be removed with a warm damp wash cloth PRIOR to re-opening the container for dispensing.

EPIKURE Curing Agent 3270 should be stored in tightly sealed, completely filled containers of metal, glass, or polyolefin plastic at normal room temperatures. The curing agent may darken during long-term storage, the extent of color formation depending on storage temperature and exposure to air.

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 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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