

Technical Data Sheet

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EPON™ Resin 8131

Product Description

EPON™ Resin 8131 is a flexibilized, 100 percent reactive, low viscosity epoxy resin for use in various concrete patching/resurfacing, reinforced plastics, adhesives and encapsulating applications.

Sales Specification

Property	Units	Value	Test Method/Standard
Weight per Epoxide	g/eq	245 – 275	ASTM D1652
Viscosity at 25°C	P	11 – 16	ASTM D445
Color	Gardner	5 max.	ASTM D1544

Typical Properties

Property	Units	Value	Test Method/Standard
Density at 25°C	lb/gal	9.2	ASTM D1475

Processing/How to use

General Information

EPON 8131 is a versatile flexibilizing resin which can be used with all classes of epoxy curing agents in both elevated and room temperature cured systems. EPON 8131 will impart stress relieving characteristics to concrete patching and surfacing compounds subjected to thermal cycling. Such binders will contribute good trowelling characteristics to patching and overlay mortars filled with properly graded sand. These mortars are particularly useful for exterior concrete repair and surfacing operations.

Other uses for EPON 8131 include flexibilized flooring systems, high burst strength reinforced plastic pipes and pipe fittings, high impact strength tooling compounds, adhesives with improved peel strength and thermal shock resistant electrical encapsulating compounds. EPON 8131 can be blended with EPON 828 to obtain a lower degree of flexibility where desirable.

Table 1 illustrates the cured state properties of EPON Resin 8131 when combined with various curing agents.

Performance PropertiesTable 1 / **Properties of Epoxy Systems Containing EPON Resin 8131**

	<u>Method</u>	<u>Units</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
EPON Resin 8131		pbw	63	100	100	100
EPON Resin 828		pbw	37	---	---	---
EPIKURE™ Curing Agent 3272		pbw	30	26	---	---
EPIKURE Curing Agent 3271		pbw	---	---	15	---
Hexahydrophthalic Anhydride		pbw	---	---	---	58
EPIKURE Curing Agent 3253		pbw	---	---	---	1.5
Handling Properties @ 25°C						
Viscosity		cP	1,600	1,200	960	400
Gel Time, 100 gram mass		minutes	48	67	19	---
Peak Exotherm, 100 gram mass		°C	102	94	160	---
Peak Exotherm, 100 gram mass		°F	216	202	320	---
Cure Schedule		wks/°C	2/25	2/25	2/25	
		hrs/°C				2/93 + 2/204
Cured State Properties ¹						
Heat Deflection Temperature	ASTM D648	°C				
Tensile Strength, ultimate	ASTM D638	psi	5,590	2,390	3,650	7,100
Tensile Elongation		%	9	25	30	10
Flexural Strength, ultimate	ASTM D790	psi	9,530	3,060	4,400	13,520
Flexural Modulus, initial		ksi	250	70	130	350
Compressive Strength, yield ²		psi	8,900	2,100	4,350	---
Izod Impact, notched	ASTM D256	ft.·lb./in.	0.52	0.95	2.6	0.83
Hardness		Shore D	81	71	75	82
Weight loss, 24 hrs at 149°C		%	---	---	---	0.83
Glass Bow Shrinkage, (inches divergence from plane surface) ³		inch/inch	0.065	0.030	0.011	---

Linear Shrinkage ⁴	inch/inch	0.0031	0.0029	---	---
Chemical Resistance					
Water absorption, 24 hrs	%	0.33	0.66	0.45	0.10
Electrical Properties					
Dielectric constant ⁵	ASTM D150	3.80	4.12	3.94	3.59
Dissipation factor		0.015	0.033	0.037	0.013
Volume resistivity					
at 25 °C	ohm•cm	9.3 x 10 ¹⁴	1.5 x 10 ¹³	2.4 x 10 ¹⁴	5.4 x 10 ¹⁵
at 66 °C	ohm•cm	2.1 x 10 ¹¹	5.2 x 10 ⁹	1.1 x 10 ¹⁰	2.2x 10 ¹⁵
at 93 °C	ohm•cm	2.4 x 10 ⁹	<10 ⁹	<10 ⁹	7.8 x 10 ¹¹
at 130 °C	ohm•cm	<10 ⁹	---	---	1.3 x 10 ¹⁰
at 150 °C	ohm•cm	---	---	---	<10 ⁹

¹ Determined on 1/8" thick test specimens. Systems A, B and C were cured for 2 weeks at 25 °C. System D was cured for 2 hours at 93 °C followed by 2 hours at 204 °C.

² Test specimen dimensions – 1/2" right cylinder, 1" height.

³ Corps of Engineers test method measuring the curing stress of a 1/8" thick resin layer bonded to a sheet of picture glass.

⁴ ERF-12-C1, Mold Size I (195 ml.).

⁵ Measured at 1 megacycle and 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.

EPON Resin 8131 should be stored in tightly sealed containers, in a dry location at normal room temperature. Some epoxy materials can crystallize during storage. The tendency to do so is affected by storage conditions, composition, and other factors. Should crystallization occur, it may be converted to liquid by opening the drum bung and gently warming to temperatures not to exceed 50 °C (122 °F).

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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