

Technical Data Sheet

EPON™ Resin 161

Product Description

EPON™ Resin 161 is a multifunctional epoxidized phenolic novolac resin that combines relatively low viscosity with good thermal stability and chemical resistance properties. Because of this special combination of properties, use in a number of applications is indicated. EPON Resin 161 can be used as the sole resin component or in combination with standard resins and HELOXY™ Modifiers normally used in epoxy formulations. EPON Resin 161 is capable of curing with all classes of curing agents.

Application Areas/Suggested Uses

- Solvent free industrial flooring
- Chemically resistant coatings and solvent free tank linings
- Laminating binders
- Filament winding
- Molding, electrical potting and encapsulation compounds
- High temperature adhesives

Benefits

- Relatively low viscosity for this class of product
- High functionality
- Superior chemical resistance
- Good thermal resistance

Sales Specifications

Property	Value	Unit	Test Method
Color	2 max.	Gardner	ASTM D1544
Epoxide Equivalent Weight	169 - 178	g/eq	ASTM D1652
Viscosity 1	18000 - 28000	cP	

¹ Brookfield Viscosity, Spindle Number 27 at 5 RPM

Typical Properties

Property	Value	Unit	Test Method
Density at 25°C	10.0	lb/gal	ASTM D1475

EPON Resin 161
<https://www.hexion.com/en-US/product/epon-resin-161>

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Performance Properties

Table 1 shows typical mechanical and thermal properties for EPON Resin 161 when cured with EPI-CURE® Curing Agent 3300 at the stoichiometric ratio of one amine active hydrogen per epoxide equivalent. Table 2 shows chemical resistance of this formulation to a variety of reagents. As chemical resistance data indicates, Bisphenol F epoxy novolacs typically show improved chemical resistance relative to resins based on Bisphenol A.

Table 1 / Physical properties of EPON Resin 161 cured with EPIKURE™ Curing Agent 3300

	Method	Units	Δ
EPON Resin 161		pbw	100
EPIKURE Curing Agent 3300		pbw	24.4
Handling Properties @ 25°C			
Gel Time, 100 gram mass		minutes	110
Cure Schedule		min./°C	90/82 90/149
Cured State Properties ¹			
Heat Deflection Temperature	ASTM D648	°C	133
Tg by DSC – midpoint	ASTM D3418	°C	154
Tensile Strength	ASTM D638	psi	11,400
Tensile Elongation at break		%	4.0
Tensile Modulus		ksi	450
Hardness		Durometer D	87
Weight loss ¹		%	0.79

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¹ castings cured 90 min. at 180 °F, plus 90 min. at 300 °F

² 24 hrs @ 149°C (300°F)

Table 2 / Chemical Resistance properties of EPON Resin 161 cured with EPIKURE Curing Agent 3300 ¹

	Method	Units	Δ
Chemical Resistance ²			
Deionized Water			
at 24 hours		%	0.17
at 7 days		%	0.43
at 28 days		%	0.92
5% Acetic Acid			
at 24 hours		%	0.16
at 7 days		%	0.44
at 28 days		%	0.93
50% Xylene / 50% Isopropanol			
at 24 hours		%	-0.02
at 7 days		%	-0.02
at 28 days		%	-0.07
Acetone			
at 24 hours		%	0.15
at 7 days		%	1.12
at 28 days		%	4.02

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	Method	Units	A
Methylene Chloride			
at 24 hours		%	5.88
at 7 days		%	31.6
at 28 days		%	disintegrated

¹ castings cured 90 min. at 180 °F, plus 90 min. at 300 °F

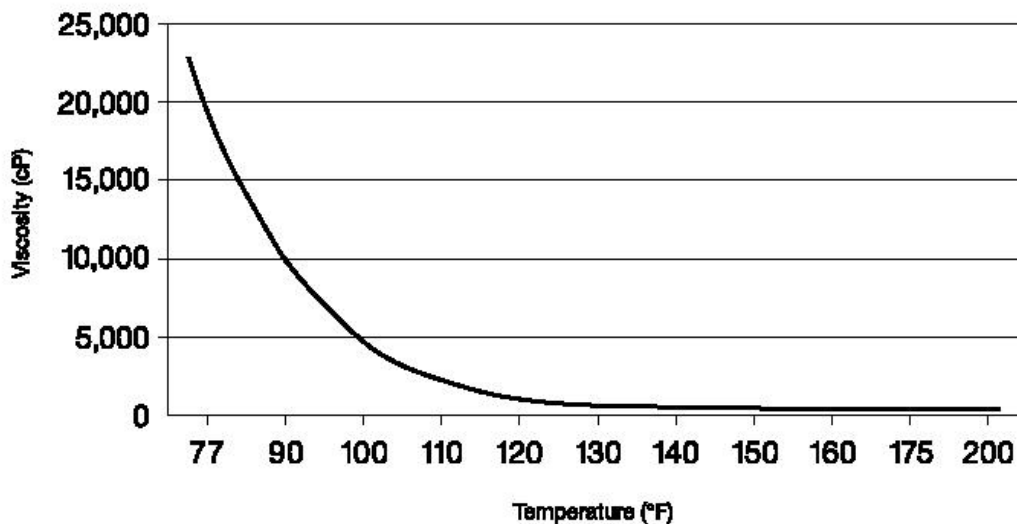
² Percent weight gain of 3 in. x 1 in. x 0.125 in. specimens immersed in specific reagents at 23 °C.

General Information

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EPON Resin 161 is only moderately higher in viscosity than EPON Resin 828. If desired as an aid to handling and processing, the viscosity may be reduced substantially by heating. Figure 1 illustrates the effect of temperature on viscosity of this material. EPON Resin 161 is compatible with typical HELOXY Modifiers, and can be blended with these products in order to modify viscosity characteristics or other traits. However, use in the intended application should be carefully evaluated.

Figure 1 / Viscosity of EPON™ Resin 161 vs. Temperature



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.

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

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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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