

Starting Formulation

EPON Resin 164 and 165 Benefits of using EPON Resins 164 and 165

The use of EPON Resins 164 and 165 in epoxy resin formulations helps to increase resistance to attack by moisture, solvents and other environmental exposures. In addition they bring higher glass transition temperature and cross-link density to cured systems which provides improved retention of strength, rigidity, electrical and other properties at elevated temperatures.

EPON Resins 164 and 165 are easily ground into powders or blended with other epoxy resins. They are compatible with most materials used with Bisphenol A (BPA) based epoxies, and their low melt viscosity provides ease of handling and good flow characteristics.

The high functionality of EPON Resins 164 and 165 shortens cure times and improves handling and speed of production. The resins have strong adhesive properties needed for bonding both metal and non-metal structural components. Typically, systems containing these ECN resins maintain low weight loss in heat aging of the cured systems.

EPON Resin 164 and 165 Performance Properties of Formulated Systems

See Hexion Technical Bulletin EPON Resin 164. Although this bulletin was written specifically for EPON Resin 164, we expect that similar systems, using EPON Resin 165, would give similar performance.

EPON Resin 164 and 165 Product Description

EPON™ Resins 164 and 165 are solid multifunctional cresol novolac epoxy resins (see molecular structure). These resins combine the high thermal stability of the cresol novolac backbone with the versatility, reactivity and chemical resistance of epoxy resins. They are used where improved properties of cured epoxy resin systems are needed, particularly at elevated temperature and where stability of electrical properties under humid conditions is required. They find application in electrical laminates, molding compounds, high-performance aerospace composites, high-temperature adhesives, powder coatings and tooling.



Where n equals an average of 3-4

EPON Resin 164 and 165 Benefits

- An average of five to six reactive epoxide groups per molecule
- Low ionic contaminants
- Low saponifiable chlorine
- Easily ground into uniform particle size
- Low melt viscosity
- Good storage stability

EPON Resin 164 and 165 Sales Specification

		164	165	
Property	Units	Value	Value	Test Method/Standard
Epoxide Equivalent Weight	g/eq	200 – 240	200 – 230	ASTM D1652
Viscosity at 25°C ¹	cP	35 – 50	---	ASTM D445
Viscosity at 130°C	P	---	100 – 200	ASTM D445
Color	Gardner	6 max.	6 max.	ASTM D1544

¹ Measured on a 60% weight solution in MEK

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EPON Resin 164 and 165 Typical Properties

		164	165	
Property	Units	Value	Value	Test Method/Standard
Saponifiable chlorine	% wt.	0.03 – 0.07	0.15 max.	
ICI melt viscosity at 150°C	P	9 – 14	30 – 50	
Melt point	°C	80 – 85	90 – 100	
Epoxy functionality		~5	~5.5-6	
Density ¹	lb/gal	1.2	1.2	

¹ Powder Coating Institute, PCI Recommended Test Procedure #4.

EPON Resin 164 and 165 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 product is prone to "blocking" or "sintering", i.e., softening of the particles and agglomeration to a semi-solid mass, when stored at slightly elevated temperatures. Blocking does not affect the performance of the resin. This product should be stored in a cool dry place to minimize handling problems due to blocking.

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.

EPON Resin 164 and 165 Packaging

Available in bulk and drum quantities.

EPON Resin 164 and 165 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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