

# Technical Data Sheet

## EPON™ Resin 1031-A-70

### Product Description

EPON™ Resin 1031-A-70 is a multifunctional epoxy resin supplied in solution. This resin is used to improve the properties of cured epoxy resin systems particularly at elevated temperatures. It finds application in electrical laminates, high performance composites and adhesives. EPON Resin 1031-A-70 features an average of greater than three reactive groups per molecule, low ionic contaminants, and low saponifiable chloride levels. The use of EPON Resin 1031-A-70 in epoxy resin formulations increases the crosslink density of cured systems. This raises the glass transition temperature. At elevated temperatures such systems have greater strength and rigidity and show improved retention of electrical properties and resistance to attack by moisture. In addition, EPON Resin 1031-A-70 imparts fluorescence and UV blocking properties to laminates.

### Application Areas/Suggested Uses

- Low and high density electrical circuits
- Structural composites
- Adhesives

### Applications

EPON Resin 1031-A-70 is commonly included in formulations to make laminates for the support of both low and high density electrical circuits. Properly made formulations using this resin are capable of meeting the demanding dimensional stability, and automated optical inspection requirements of multilayer printed circuit boards. Addition of EPON Resin 1031-A-70 helps prevent solder mask "print through" for all circuit boards. The low level of ionic impurities in this resin contributes to high electrical resistance. The low saponifiable chloride content helps to shorten cure time with selected curing agents, thus improving handling characteristics and speed of production of the laminates.

In the multilayer laminate industry, EPON Resin 1031-A-70 can be used at a level of 5 to 30% weight solids added to brominated resin laminating varnishes. Laminates prepared from prepregs with this level of EPON Resin 1031-A-70 modification possess many of the same properties as conventional FR-4 boards but with a substantial increase in thermal resistance. Glass transition temperatures (DSC) in the range of 150 to 160 °C can be achieved at the 30% weight solids level. No special handling of prepreg by fabricators is necessary as prepreg pressing conditions are the same as with conventional FR-4 systems.

EPON Resin 1031-A-70 has a lower viscosity than EPON Resin 1031-B-80 and is used where acetone can be tolerated in the laminating process for ease of handling and varnish blending.

EPON Resin 1031-A-70 is also used in structural composites and adhesives. High performance products are made for aircraft and aerospace use where cured resin systems are used for metal-to-metal bonding and structural components. The strong adhesive properties of epoxies as well as the retention of other physical properties at higher temperatures are particularly important in these end uses.

### Benefits

- Low viscosity

### Sales Specifications

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EPON Resin 1031-A-70

<https://www.hexion.com/en-US/product/epon-resin-1031-a-70>

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Property	Value	Unit	Test Method
Epoxide Equivalent Weight	195 - 230	g/eq	ASTM D1652
Solids	69 - 71	%	ASTM D1259
Viscosity at 25°C	A - I	Gardner	ASTM D1545

## Typical Properties

Property	Value	Unit	Test Method
Density at 25°C	9.1	lb/gal	ASTM D1475
Saponifiable Chloride	0.08	% wt.	
Solvent	Acetone		

## 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 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/](http://www.hexion.com/Contacts/)

For literature and technical assistance, visit our website at: [www.hexion.com](http://www.hexion.com)