

Starting Formulation

EPON Resin 1183 and 1183-T-70 Product Description

EPON™ Resin 1183 is a brominated epoxy resin with a moderate bromine content. It was designed for applications requiring good sintering resistance at room temperature and moderate flammability resistance. EPON Resin 1183 can be used in solid form for blends with liquid epoxy resins or hot melt applications, or dissolved in an appropriate solvent for laminating or similar applications.

EPON Resin 1183 is also available as a solution in toluene at 70 weight percent solids, designated as EPON Resin 1183-T-70.

EPON Resin 1183 is a reaction product of bisphenol A, tetra-bromobisphenol A, and epichlorohydrin.

EPON Resin 1183 and 1183-T-70 Sales Specification

Property	Units	Value	Test Method/Standard
EPON Resin 1183			
Weight per Epoxide	g/eq	625 – 725	SMS 2026
Color	Pt-Co	500 max. ¹	ASTM D1209
Soilds	% wt.	99.0 min.	SMS 1524
EPON Resin 1183-T-70			
Weight per Epoxide	g/eq	625 – 725	SMS 2026
Color	Pt-Co	500 max.	SMS 2858
Soilds	% wt.	69.0 – 71.0	SMS 1524

EPON Resin 1183 and 1183-T-70 Typical Properties

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Property	Units	Value	Test Method/Standard
EPON Resin 1183			
Viscosity at 25°C	P	---	
Bromine Content	% wt.	42	
Softening Point	°C	95	
Density at 25°C	g/cc	1.73	
Appearance	Off white coarse powder		
EPON Resin 1183-T-70			
Viscosity at 25°C	P	3.5	
Bromine Content	% wt.	42	
Softening Point	°C	---	
Density at 25°C	g/cc	1.35	
Appearance	Transparent viscous liquid		

EPON Resin 1183 and 1183-T-70 Processing/How to use

Applications

EPON Resin 1183 offers alternatives for formulators seeking replacements for tetrabromobisphenol A, octa- and decabromodiphenyl oxides, antimony trioxide, phosphorus compounds, and other flame retardant additives for a variety of applications, including coatings, laminating, and composites. EPON Resin 1183 in solid form is most appropriate for those applications that require a moderate bromine level and resistance to sintering at room temperature. EPON Resin 1183-T-70 provides the material in solution for ease of processing with solvent-based systems.

Processing

The effects of temperature on the typical viscosity of EPON Resin 1183 are provided by Figure 1. The physical characteristics of non-sintering solid at room temperature, low melt viscosity at elevated temperatures, good solubility in a variety of epoxy resins and solvents, and moderate bromine content make EPON Resin 1183 a good choice for a wide variety of processing techniques. In epoxy based resin systems, 10-20 weight percent bromine from EPON Resin 1183 is generally sufficient to impart the desired level of flammability resistance.

Figure 1 / Temperature-viscosity relationship of EPON™ Resin 1183



EPON Resin 1183 is soluble in a wide variety of ketone, aromatic hydrocarbon, and ether alcohol type solvents used in manufacturing flame retardant materials. Gardner-Holdt viscosities are listed below for some typical high solids solutions of this resin:

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80 percent in toluene	Z ₃ -Z ₄
80 percent in acetone	Z ₃
80 percent in methyl isobutyl ketone	Z ₄ -Z ₅

Solutions of EPON Resin 1183 inherently resist crystallization, even under adverse conditions of thermal cycling. The values reported below represent the period of crystal-free time (in days) of several solutions subjected to daily thermal cycling from 25 °C to 7 °C and mechanically shocked.

80 percent in methyl ethyl ketone	>60
70 percent in methyl ethyl ketone	30
80 percent in toluene	>60
70 percent in toluene	>60
70 percent in acetone	49

EPON Resin 1183 and 1183-T-70 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 1183 and EPON Resin 1183-T-70 should be kept in cool, dry conditions in tightly closed containers, preferably in the original packaging. Under these conditions, the products should have a storage life of at least one year.

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 1183 and 1183-T-70 Packaging

Available in bulk and drum quantities.

EPON Resin 1183 and 1183-T-70 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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