

**Advanced Materials****Araldite<sup>®</sup> EPN 1138**

## POLYFUNCTIONAL EPOXY NOVOLAC RESIN

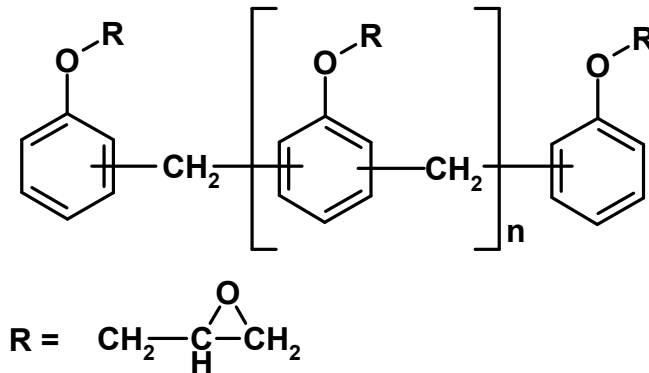
**GENERAL**

Araldite<sup>®</sup> EPN 1138 is a semi-solid multifunctional epoxy novolac resin with superior chemical resistance and heat stability properties.

The resin is suited to the manufacture of pre-impregnated material for electrical, electronics and structural applications.

**CHEMICAL DESCRIPTION**

Araldite<sup>®</sup> EPN 1138 is a polyfunctional epoxidized phenol novolac resin.

**CHEMICAL STRUCTURE****APPLICATIONS**

Upgrading of epoxy resins for electrical grade laminates to meet the requirements of:

- IEC 249-2
- MIL-P-13949 F, Type GF
- NEMA FR-4

**ADVANTAGES**

Higher cross-linking  
Better dimensional stability  
Higher Tg  
Better chemical resistance

---

<b>TYPICAL PROPERTIES*</b>	Visual Appearance	Clear, no contamination
	Color, Gardner, max.	3
	Viscosity, mPa s (cPs) @ room temperature	Semi-solid
	@ 52°C (125°F)	20,000 - 50,000
	Epoxy Value, eq/kg	5.5 - 5.7
	Epoxy Equivalent Weight, g/eq	175 - 182
	Density @ 25°C (77°F), g/cm <sup>3</sup> (lb/gal.)	1.22 (10.2)
Flash Point, °C (°F)	>200 (>392)	

\* Typical properties are based on Huntsman's test methods. Copies are available upon request.

---

**STORAGE** Araldite® EPN 1138 is supplied in 525 pound steel drums and in bulk. This product should be stored in a dry place, in the sealed original container, at temperatures between +2°C and +40°C (+35.6°F and 104°F). Under these storage conditions the shelf life is 5 years. The product should not be exposed to direct sunlight.

---

**PRECAUTIONARY STATEMENT** Huntsman Advanced Materials Americas LLC maintains up-to-date Material Safety Data Sheets (MSDS) on all of its products. These sheets contain pertinent information that you may need to protect your employees and customers against any known health or safety hazards associated with our products. Users should review the latest MSDS to determine possible health hazards and appropriate precautions to implement prior to using this material.

**First Aid!**

Refer to MSDS as mentioned above.

**KEEP OUT OF REACH OF CHILDREN**

**FOR PROFESSIONAL AND INDUSTRIAL USE ONLY**

---

**IMPORTANT LEGAL NOTICE**

Sales of the product described herein ("Product") are subject to the general terms and conditions of sale of either Huntsman Advanced Materials LLC, or its appropriate affiliate including without limitation Huntsman Advanced Materials (Europe) BVBA, Huntsman Advanced Materials Americas Inc., or Huntsman Advanced Materials (Hong Kong) Ltd. ("Huntsman"). The following supercedes Buyer's documents.

Huntsman warrants that at the time and place of delivery all Products sold to Buyer shall conform to the specifications provided to Buyer by Huntsman.

While the information and recommendations included in this publication are, to the best of Huntsman's knowledge, accurate as of the date of publication, NOTHING CONTAINED HEREIN (EXCEPT AS SET FORTH ABOVE REGARDING CONFORMANCE WITH SPECIFICATIONS PROVIDED TO BUYER BY HUNTSMAN) IS TO BE CONSTRUED AS A REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS, OR WARRANTIES AS TO QUALITY OR CORRESPONDENCE WITH PRIOR DESCRIPTION OR SAMPLE, AND THE BUYER ASSUMES ALL RISK AND LIABILITY WHATSOEVER RESULTING FROM THE USE OF SUCH PRODUCT, WHETHER USED SINGLY OR IN COMBINATION WITH OTHER SUBSTANCES.

No statements or recommendations made herein are to be construed as a representation about the suitability of any Product for the particular application of Buyer or user or as an inducement to infringe any patent or other intellectual property right. Buyer is responsible to determine the applicability of such information and recommendations and the suitability of any Product for its own particular purpose, and to ensure that its intended use of the Product does not infringe any intellectual property rights.

The Product may be or become hazardous. The Buyer should obtain Material Safety Data Sheets and Technical Data Sheets from Huntsman containing detailed information on Product hazards and toxicity, together with proper shipping, handling and storage procedures for the Product, and should comply with all applicable governmental laws, regulations and standards relating to the handling, use, storage, distribution and disposal of, and exposure to the Product. Buyer shall also take all steps necessary to adequately inform, warn and familiarize its employees, agents, direct and indirect customers and contractors who may handle or be exposed to the Product of all hazards pertaining to and proper procedures for safe handling, use, storage, transportation and disposal of and exposure to the Product, and the containers or equipment in which the Product may be handled, shipped or stored.

Araldite is a registered trademark of Huntsman LLC or an affiliate thereof in one or more countries, but not all countries.

© 2006 Huntsman Advanced Materials Americas Inc.

Main Offices :

**Huntsman Corporation**  
10003 Woodloch Forest Dr.  
The Woodlands  
Texas 77380  
(281) 719-6000

**Huntsman Advanced Technology  
Center**  
8600 Gosling Rd.  
The Woodlands  
Texas 77381  
(281) 719-7400