



D.E.R.[™] 530-A80

Brominated Epoxy Resin Solution

Description

D.E.R.[™] 530-A80 Epoxy Resin is a brominated resin supplied in acetone. It is designed for the production of FR-4 type rigid board and multilayer electrical laminates.

Typical Applications

Typical Formulation

For FR-4 laminate production, D.E.R. 530-A80 Epoxy Resin Solution was formulated with dicyandiamide hardener and 2-methylimidazole accelerator. The exact concentration of hardener and accelerator must be optimized to suit the particular equipment and performance needs.

Formulation	Parts Solid
D.E.R. 530-A80 Resin	100
Dicyandiamide	2.8
2-methylimidazole	0.08

Prepreg Production

The formulation described was used to impregnate 7628 type glass cloth then passed through a lab treater to yield prepreg with the following characteristics:

Prepreg Characteristics	
Resin Content (wt%)	40 – 45
Gel Time (sec)	100 – 150
Flow (wt%)	14 – 23

Laminate Production

Laminates were produced using 8 plies of the prepreg between two sheets of 1 oz. copper foil. The constructions were pressed at 200 psi for 60-90 minutes at 350°F. Final properties of the laminate are:

Laminate Properties	
Tg by DSC @ 20°C/min	130 – 140°C
Fire retardancy UL 94	V – O
Copper peel strength @ 25°C (lb/in)	9 – 11
T260 (min)	10 – 15
Decomposition temperature (°C)	315

Typical Properties

Property ⁽¹⁾	Value	Method
Epoxide Equivalent Weight (g/eq) on solids	425 – 440	ASTM D-1652
Color (Gardner)	2 Max.	ASTM D-1544
Viscosity @ 25°C (mPa·s)	1500 – 2500	ASTM D-445
Bromine Content on Resin Solids (%)	19.5 – 21.5	Calculated
Hydrolyzable Chloride Content (ppm)	190 – 290	ASTM D-1726
Volatiles (wt%)	18.5 – 20.5	DowM 101188
Reactivity @ 171°C (sec)	180 – 240	DowM 101210
Water Content (%)	0.17 Max.	ASTM E-203
Shelf Life (Months)	24	

(1) Typical properties, not to be construed as specifications.

Safety and Handling

The Dow Chemical Company provides its customers with a product specific Material Safety Data Sheet (MSDS) or Safety Data Sheet (SDS) to cover potential health effects, safe handling, storage, use and disposal information. Dow strongly encourages its customers to review the MSDS or SDS on its products and other materials prior to their use.

D.E.R.[™] 530-A80 Epoxy Resin is a solution of epoxy resin in non-reactive solvents. Because of the possible hazards of the solvents used, solutions may be more hazardous to handle than the pure resins alone. Solutions may be much more irritating to the skin and eyes. These solutions are hazardous from inhalation with the potential to cause central nervous system depression (including signs such as dizziness and drowsiness followed by unconsciousness or even death) and other systemic effects. The solvents have exposure guidelines from the American Conference of Governmental Industrial Hygienists (ACGIH). The Threshold Limit Value (TLV) varies according to the specific solvent employed. The resin solutions containing solvent are more flammable than solid resins alone, with fire and explosion hazard again related to the solvent used. Hazard from ingestion is generally low but several of the solvents may cause chemical pneumonia if aspirated into the lung.

This brominated epoxy resin solution is supplied in bulk or in 250 kg tight-head drums. The resin solution should be stored in a dry place in its original closed packaging and should retain its chemical properties for a period of at least 24 months. For further handling information, consult the Dow brochure entitled, *DOW Epoxy Resins Product Stewardship Manual, Safe Handling and Storage*, Form No. 296-00312 and the Dow technical bulletin, *Product Coding, Shelf-life and Storage Stability*, Form No. 296-01657.

Product Stewardship

The Dow Chemical Company has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis of our Product Stewardship philosophy by which we assess the health and environmental information on our products and then take the appropriate steps to protect employee and public health and the environment. The Dow Chemical Company has enduring commitments to Responsible Care[®] in the management of chemicals worldwide. Our Product Stewardship program rests with every individual involved with Dow products from the initial concept and research to the manufacture, sale, distribution, and disposal of each product.

[™] Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

[®] Responsible Care is a service mark of the American Chemistry Council in the United States

D.E.R. 530-A80 Brominated Epoxy Resin Solution

Form No. 296-01459-0109X-TD

Customer Notice

Dow encourages its customers and potential users of Dow products to review their applications for such products from the standpoint of human health and environmental quality. To help ensure that Dow products are not used in ways for which they were not intended or tested, Dow personnel are available to assist customers in dealing with ecological and product safety considerations. Your Dow sales representative can arrange for the proper contacts. Dow literature, including MSDS or SDS, should be consulted prior to the use of Dow products.

Medical Application Policy

Dow will not knowingly sell or sample any product or service ("Product") into any commercial or developmental application that is intended for:

- (a) permanent (long term) contact with internal body fluids or internal body tissues. Long term is a use which exceeds 72 continuous hours;
- (b) use in cardiac prosthetic devices regardless of the length of time involved (cardiac prosthetic devices include, but are not limited to, pacemaker leads and devices, artificial hearts, heart valves, intra-aortic balloons and control systems and ventricular bypass assisted devices);
- (c) use as a critical component in medical devices that support or sustain human life; or
- (d) use specifically by pregnant women or in applications designed specifically to promote or interfere with human reproduction.

Additionally, all Products intended for use in pharmaceutical applications must pass the then current Pharmaceutical Liability Guidelines. For additional information please contact your regular Dow representative.

Food Contact Applications

This epoxy resin will NOT comply with the U.S. Food, Drugs and Cosmetics Act as amended under Food Additive Regulation 21 CFR 175.300.

If your applications include food contact requirements, please consult your Dow representative.

Regulatory Status

For more information on the regulatory status of this product, please refer to the MSDS or SDS for this product.

Contact information:

North America: 800-441-4369
+1-989-832-1426
+1-989-832-1465 (fax)
Mexico: +1-800-441-4369
Brazil: +55-11-5188-9222
+55-11-5188-9749 (fax)
Europe: +800-3-694-6367
+32-3-450-2240
+32-3-450-2815 (fax)
Asia Pacific: +800-7776-7776[#]
+800-7779-7779[#] (fax)
+60-3-7958-3392
+60-3-7958-5598 (fax)

[#] except Indonesia and Vietnam

<http://www.dowepoxy.com>

Notice: No freedom from any patent owned by Dow or others is to be inferred. Dow assumes no obligation or liability for the information in this document. The information provided herein is presented in good faith and is based on the best of Dow's knowledge, information, and belief. Since use conditions at non-Dow facilities are beyond Dow's control and government requirements may differ from one location to another and may change with time, it is solely the Buyer's responsibility to determine whether Dow's products are appropriate for the Buyer's use, and to assure the Buyer's workplace, use, and disposal practices are in compliance with applicable government requirements. Consequently, Dow assumes no obligation or liability for use of these materials and makes no warranty, express or implied. The user of the information provided is solely responsible for compliance with any applicable government requirements. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

