D.E.R.™ 332
Liquid Epoxy Resin

Description

D.E.R.™ 332 Epoxy Resin is a high purity bisphenol A diglycidylether.

Introduction

The uniqueness of D.E.R. 332 Liquid Epoxy Resin is reflected in its maximum epoxy equivalent weight of 176 grams/equivalent (the chemically pure diglycidylether of bisphenol A has an epoxy equivalent weight of 170 g/eq). Because of its high purity and low polymer fractions content, D.E.R. 332 Epoxy Resin assures uniform performance and exceptionally low viscosity, low chloride content and light color. Under some cure conditions this epoxy resin provides improved elevated temperature properties over standard bisphenol A based epoxy resins such as D.E.R.™ 331™ Epoxy Resin for example.

D.E.R. 332 Epoxy Resin is used mainly in filament winding, electrical laminates and encapsulation applications. A wide variety of curing agents is available to cure this liquid epoxy resin at ambient conditions. Most frequently used curing agents are cycloaliphatic polyamines, polyamides, amidoamines, and modified versions of these. Curing may also be done at an elevated temperature to improve selected properties such as chemical resistance and glass transition temperature. Elevated temperature cures are necessary and long post-cures are required to develop full end properties if anhydride or catalytic curing agents are employed.

Typical Applications

This product is suitable for use in applications such as:

- Adhesives
- Casting and Tooling
- Composites
- Photocure Industrial Coatings
- Potting and Encapsulation

Typical Properties

Property(1)	Value	Method
Epoxide Equivalent Weight (g/eq)	171 – 175	ASTM D-1652
Epoxide Percentage (%)	24.6 – 25.1	ASTM D-1652
Epoxide Group Content (mmol/kg)	5710 – 5850	ASTM D-1652
Color (Platinum Cobalt)	75 Max.	ASTM D-1209
Viscosity @ 25°C (mPa•s)	4000 – 6000	ASTM D-445
Hydrolyzable Chloride Content (ppm)	300 Max.	ASTM D-1726
Water Content (ppm)	700 Max.	ASTM E-203
Density @ 25°C (g/ml)	1.16	ASTM D-4052
Epichlorohydrin Content (ppm)	5 Max.	DowM 101321
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.

This liquid epoxy resin is supplied in 225 kg tight-head drums. The resin should be stored in a dry place in its original closed packaging. This low viscosity epoxy resin 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 technical bulletin, *Product Coding, Shelf-life and Storage Stability,* Form No. 296-01657.

D.E.R.™ 332 Liquid Epoxy Resin can crystallize. This reversible, physical phenomena can be greatly avoided by storing the resin at temperatures not below 25ºC. For additional information, also consult the technical bulletin, *Crystallization of Liquid Epoxy Resins,* Form No. 296-01652.

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.

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

When properly formulated and cured for food contact applications, this resin will comply with the U.S. Food, Drugs and Cosmetics Act as amended under Food Additive Regulation 21 CFR 175.300 (b)(3)(viii)(a); “Epoxy resins, as basic polymer”. This use is also subject to good manufacturing practices and any limitations specified in each regulation. Please consult the regulations for complete details.

If your applications include food contact requirements, please contact your Dow representative for further information and forthcoming EC regulations. Also consult the Dow data sheet, *Food Additive Status for Epoxy Resins, Curing Agents and Epoxy Novolac Resins*, Form No. 296-01425.

Regulatory Status

This Epoxy Resin is regarded as a substance according to Council Directive 92/32/EEC of 30 April 1992; the 7th Amendment of Council Directive 67/548/EEC, and is listed under number 216-823-5 on the European Inventory of Existing Chemical Substances (EINECS). In addition, Dow confirms that the chemicals and intentional additives which form the basis of this product are listed on EINECS.

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

Chemical Inventory Listing

CAS Number(1)		1675-54-3
Europe	EINECS	216-823-5
United States	TSCA	1675-54-3
Canada	DSL	1675-54-3
Australia	AICS	1675-54-3
Japan	ENCS	4-209
Korea	KECI	KE-03162
Philippines	PICCS	1675-54-3
China	SEPA	1675-54-3

(1) Please refer to the MSDS or SDS for this product to ensure this CAS number is consistent with the product(s) you use.

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