

# D.E.R. 332

## Liquid Epoxy Resin

### Description

D.E.R.\* 332 epoxy resin is a high purity bisphenol-A diglycidyl ether.

### 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 diglycidyl ether 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 are cycloaliphatic polyamines, polyamides, amidoamines, and modified versions of these. These systems are sometimes cured at elevated temperatures 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. NOTE: D.E.R. 332 epoxy resin might crystallize. This reversible, physical phenomena can be greatly avoided by storing the resin at temperatures not below 25°C.

### Typical Properties<sup>1</sup>

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
Viscosity @ 25°C (77°F), (mPa.s)	4000 - 6000	ASTM D-445
Color, Platinum Cobalt	75 Max.	ASTM D-1209
Density @ 25°C (77°F), (g/ml)	1.16	ASTM D-4052
Clarity	Pass	DowM 101303-TE
Hydrolyzable Chlorine Content, (ppm)	300 Max.	RPM 105-D
Epichlorohydrin Content, (ppm)	5 Max.	RPM 900-A
Water Content, (ppm)	700 Max.	ASTM E-203
Flash Point, (°C) (°F)	252 (485)	ASTM D-93
Non-volatile Content, (wt. %)	100	DowM 101188-TE
Shelf Life, (Months)	24	

<sup>1</sup> Typical properties; not to be construed as specifications

### Typical Applications

This product is suitable for use in applications such as:

- Adhesives
- Casting and Tooling
- Civil Engineering
- Composites
- Marine & Protective Coatings
- Photocure Industrial Coatings
- Potting and Encapsulation

### Safety and Handling

The Dow Chemical Company provides its customers with a product specific Material Safety Data Sheet (MSDS) to cover potential health effects, safe handling, storage, use and disposal information. Dow strongly encourages its customers to review the MSDS on its products and other materials prior to their use. For further handling information consult the Dow brochure entitled, *DOW Epoxy Resins Product Stewardship Manual, Safe Handling and Storage*, Form No. 296-00312-898.

### 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 Material Safety Data Sheets should be consulted prior to the use of Dow products.

## Food Contact Statement

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. This use is subject to good manufacturing practices and limitations specified in each regulation, which should be consulted 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

## Chemical Inventory List

CAS Number*		
		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	MITI	4 - 209
Korea	KECL	KE-03162
Philippines	PICCS	1675-54-3
China	Informal 1997 PRC Inventory	1675-54-3

\* Please refer to the Material Safety Data Sheet (MSDS) or SDS for this product to ensure this CAS number is consistent with the product(s) you use.

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. With respect to China, please note that there is currently no formal Chinese Chemical Inventory legislation in place. The Chinese Authorities are in the process of draft-

ing such legislation. There is in place an "Informal 1997 PRC Chemical Inventory List" and D.E.R. 332 epoxy resin (CAS # 1675-54-3) is listed on it.

For more information on the regulatory status of this product, please refer to the Material Safety Data Sheet (MSDS) or SDS for this product.

### For additional information:

In the U.S. and Canada,  
contact The Dow Customer Information Group at:  
1-800-441-4369 or 989-832-1426  
Fax: 989-832-1465

In Mexico,  
Call 95-800-441-4369 (Toll Free) or  
52-5-2014718 (Outside Mexico)

In Latin America,  
contact The Dow Chemical Service Center at:  
In Argentina, call 54 11 4390329  
In Brazil, call 55 11 51889367

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Email address: <http://www.dow.com/assistance/thoughts.htm>

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