

# D.E.R. 383

## Liquid Epoxy Resin

### Description

D.E.R.\* 383 liquid epoxy resin is a reaction product of epichlorohydrin and bisphenol-A.

### Introduction

D.E.R. 383 epoxy resin is a liquid epoxy resin processed to give low viscosity without the use of diluents. The physical strength, toughness, excellent adhesion, chemical resistance and low shrinkage have established liquid epoxy resins as major raw materials for high quality solvent-free coatings, linings, industrial flooring, groutings and concrete reinforcements. They may also be used for tooling, encapsulation, adhesives, filament winding and laminates. D.E.R. 383 can also serve as a basis for advanced polymers for a variety of solvent-borne, water-borne and UV-curable resins. A wide variety of curing agents is available to cure this liquid epoxy resin at ambient conditions. The most frequently used are aliphatic polyamines, polyamides, and modified versions of these. Elevated temperatures are necessary and long post-cures 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
- Civil Engineering
- Composites
- Automotive Coatings
- Marine & Protective Coatings
- Photocure 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

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

|                                      |              |             |
|--------------------------------------|--------------|-------------|
| Epoxide Equivalent Weight, (g/eq)    | 176 - 183    | ASTM D-1652 |
| Viscosity @ 25°C (77°F), (mPa.s)     | 9000 - 10500 | ASTM D-445  |
| Density @ 25°C (77°F), (g/ml)        | 1.16         | ASTM D-4052 |
| Color, Platinum Cobalt               | 125 Max.     | ASTM D-1209 |
| Hydrolyzable Chlorine Content, (ppm) | 500 Max.     | RPM 105-D   |
| Flash Point, (°C)                    | 252          | ASTM D-93   |
| Water Content, (ppm)                 | 700 Max.     | ASTM E-203  |
| Epichlorohydrin Content, (ppm)       | 5 Max.       | RPM-900A    |
| Shelf Life, (Months)                 | 24           |             |

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

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<sup>®</sup> 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 brochure entitled, *Food Additive Status for Epoxy Resins, Curing Agents and*

### Regulatory Status

This epoxy resin is regarded as a polymer according to the 6th Amendment of Council Directive 67/548/EEC and as substances according to Council Directive 92/32/EEC of 30 April 1992; the 7th Amendment of that same directive. The substance has been reported to the European Commission as No-Longer-Polymer (NLP), is registered under NLP number 500-033-5, and is, therefore, exempt from 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. Please be aware that Dow utilizes CAS Reg. Nr. 25085-99-8 (bisphenol-A diglycidyl-ether homopolymer) for bisphenol-A based liquid epoxy resins instead of CAS Reg. Nr. 25068-38-6 (bisphenol-A polymer with epichlorohydrin) which is

### Chemical Inventory List

| CAS Number*   |                                | 25085-99-8 (25068-38-6) |
|---------------|--------------------------------|-------------------------|
| Europe        | EINECS                         | NLP # 500-033-5         |
| United States | TSCA                           | 25085-99-8              |
| Canada        | DSL                            | 25085-99-8              |
| Australia     | AICS                           | 25085-99-8              |
| Japan         | MITI                           | 7-1279                  |
| Korea         | KECL                           | KE-24083                |
| Philippines   | PICCS                          | 25085-99-8              |
| China         | Informal 1997<br>PRC Inventory | 25085-99-8              |

\* 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.

utilized for similar resins in the market place. Both CAS numbers describe epoxy resins produced by the condensation of epichlorohydrin with bisphenol-A. 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 drafting such legislation.

There is in place an "Informal 1997 PRC Chemical Inventory List" and the above mentioned CAS Reg. Nr. 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 Customer Information Group at:  
1-800-441-4369 or 517-832-1426  
Fax: 517-832-1465

In the Pacific,  
Contact the Dow Customer Service Center at:  
81-120-024394 (toll-free in Japan) or  
81-3-5460-2114 (outside Japan)

In Europe, Middle East and Africa,  
Contact the Dow Information Center at:  
++31-20-6916268  
Fax: ++ 31-20-6916418

In Latin America,  
Contact the Dow Chemical Service Center at:  
In Brazil, call 55 11 51889367  
In Mexico, call 95-800-441-4369 (toll-free in Mexico) or  
52-5-2014718 (outside Mexico)  
In Argentina, call 54-11-4390329

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