

# D.E.R. 351

## Liquid Epoxy Resin

### Description

D.E.R.\* 351 liquid epoxy resin is a reaction product of epichlorohydrin with bisphenol-A and bisphenol-F.

### Introduction

D.E.R. 351 liquid epoxy resin is a diluent free epoxy resin of lower viscosity than D.E.R. 352 epoxy resin. D.E.R. 351 liquid epoxy resin combines the performance properties of standard bisphenol-A liquid epoxy resin with the low viscosity of bisphenol-F liquid epoxy resin. Crystallization, often a problem with conventional bisphenol-A or bisphenol-F based liquid epoxy resins, is essentially non-existent with D.E.R. 351 liquid epoxy resin. D.E.R. 351 epoxy resin is compatible with common liquid epoxy resins and can also be blended with other materials (diluent, hydrocarbon resins etc.) to increase flexibility or obtain other specific properties.

### 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.

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

Epoxide Equivalent Weight, (g/eq)	169 - 181	ASTM D-1652
Percentage Epoxide, (%)	23.8 - 25.4	ASTM D-1652
Epoxide Group Content, (mmol/kg)	5520 - 5920	ASTM D-1652
Viscosity @ 25°C (77°F), (mPa.s)	4500 - 6500	ASTM D-445
Color, Gardner	3 Max.	ASTM D-1544
Density @ 25°C (77°F), (g/ml)	1.17	ASTM D-4052
Non-volatile Content, (wt%)	100	DowM 101188
Flash Point, (°C)	240	ASTM D-1310
Shelf Life, (Months)	24	

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

### 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

The base epoxy resin components of this epoxy resin blend are regarded as polymers 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. These substances have been reported to the EC Commission as No-Longer-Polymers (NLP), are registered under NLP # 500-033-5 and NLP # 500-108-2, and are, 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. The bisphenol-A diglycidyl ether component is registered under CAS Reg. Nr. 25085-99-8 on the US Toxic Substances Control Act (TSCA). In Europe, CAS # 25068-38-6 is frequently used (bisphenol-A polymer with epichlorohydrin). Both CAS numbers describe epoxy resins produced by the condensation of bisphenol-A

## Chemical Inventory List

CAS Number*		25085-99-8 (25068-38-6)/28064-14-4
Europe	EINECS	NLP #500-033-5/500-108-2
United States	TSCA	25085-99-8/28064-14-4
Canada	DSL	25085-99-8/28064-14-4
Australia	AICS	25085-99-8/28064-14-4
Japan	MITI	7-1279/7-2044
Korea	KECL	KE-24083/KE-28226
Philippines	PICCS	25085-99-8/28064-14-4
China	Informal 1997 PRC Inventory	25085-99-8/28064-14-4

\* 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.

with epichlorohydrin. 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. are 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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In Europe, Middle East and Africa,  
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\*Toll Free from Austria, Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and The United Kingdom.

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