



## D.E.R. 671

Solid Epoxy Resin

### Description

D.E.R.\* 671 solid epoxy resin is a low molecular weight solid reaction product of epichlorohydrin and Bisphenol-A.

### Introduction

D.E.R. 671 solid epoxy resin is a standard low molecular weight solid epoxy resin designed for use in applications where cure must be achieved at room temperature. D.E.R. 671 solid epoxy resin is available in flake form and generally provides the best overall balance of properties for polyamide- and polyamine-cured coatings. In addition, D.E.R. 671 solid epoxy resin can also be used in powder coatings where it provides excellent flow in standard as well as in low temperature curing systems. It can be used in both epoxy and epoxy/polyester powder coatings.

D.E.R. 671 epoxy resin is available in various solutions, i.e. D.E.R. 671-X75 epoxy resin solution, a solution in xylene (75 wt %). D.E.R. 671-X75 low molecular weight epoxy resin solution for instance, formulated with polyamine or polyamide hardeners, forms an excellent base for many high quality chemical resistant coatings. These two-pack coating systems have applications where cure must be achieved at ambient temperature, and films must withstand exposure to corrosive atmospheres containing a variety of chemical reagents, solvents or salt water. The outstanding resistance properties, hardness, excellent adhesion to almost any substrate and flexibility are utilized in a wide variety of finishes, including marine coatings, tank-linings and industrial maintenance coatings. D.E.R. 671 solid epoxy resin can also be used as complimentary resin in non-epoxy coating systems to improve resistance properties

**Notice:** Consult the Safety and Handling section on the next page for product specific requirements/suggestions as well as the corresponding Sales specification.

### Typical Properties

Property <sup>(1)</sup>	Value	Method
Epoxide Equivalent Weight, (g/eq)	475 - 550	ASTM D-1652
Percentage Epoxide, (%)	7.8 - 9.1	ASTM D-1652
Epoxide Group Content, (mmol/kg)	1820 - 2110	ASTM D-1652
Solution Viscosity, 25 °C (cSt)	160 - 250 <sup>(2)</sup>	ASTM D-445
Melt Viscosity @ 150 °C (mPa.s)	400 - 950	ASTM D-4287
Softening Point (°C)	75 - 85	RPM 108-C
Color, Pt-Co	90 Max. <sup>(2)</sup>	ASTM D-1209
Particulate Rating	Pass	DowM 101668
Shelf Life, Months	24	

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

(2) 40 wt % in diethylene glycol monobutyl ether

### Typical Applications

This product is suitable for use in applications such as

- Civil Engineering
- Can Coatings
- Coil Coatings
- Marine & Protective Coatings
- Powder Coatings

## **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.

**Notice:** This solid epoxy resin is supplied as solid flakes in 25 kg polyethylene bags. It is recommended that this low molecular weight solid epoxy resins be stored in a cool and dry place in its original closed packaging in order to avoid sintering of the material. Flakes / granules may fuse if subjected to excess heat or compression. It is also recommended that stacking of D.E.R. low molecular weight solid epoxy resin bags be avoided whenever possible. Also see the corresponding sales specification. Chemically this low molecular weight solid epoxy resin should retain its 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. 296-00312-898.

## **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 world wide. 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 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 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 solid epoxy resin is regarded as a polymer according to Council Directive 92/32/EEC of 30 April 1992; the 7th Amendment of Council Directive 67/548/EEC, and is, therefore, exempt from the European Inventory of Existing Chemical Substances (EINECS). In addition, Dow confirms that the chemicals and intentional additives that form the basis of this product are listed on EINECS.

## Regulatory Status (Cont.)

With respect to China, please note that there is currently no formal Chinese Chemical Inventory legislation. Chinese Authorities are in the process of drafting such legislation. There is an "Informal 2000 PRC Chemical Inventory List" and all the components of D.E.R. 671 solid epoxy resin 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.

## Chemical Inventory Listing

CAS Number	25036-25-3	
Europe	EINECS	Polymer
United States	TSCA	25036-25-3
Canada	DSL	25036-25-3
Australia	AICS	25036-25-3
Japan	ENCS	7-1283
Korea	KECL	KE-24070
Philippines	PICCS	25036-25-3
China	Informal 2000 PRC Inventory	25036-25-3

\* 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.

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