



D.E.R.[™] 354

Liquid Epoxy Resin

Description D.E.R.[™] 354 Liquid Epoxy Resin is a standard liquid epoxy resin based on the reaction products of bisphenol F and epichlorohydrin.

Introduction D.E.R. 354 Liquid Epoxy Resin is an unmodified bisphenol F based liquid, low viscosity epoxy resin. It is compatible with common epoxy resins and can be blended with them in any ratio. It achieves a high degree of cure at ambient temperatures, providing improved resistance performance against solvents compared to standard bisphenol A liquid epoxy resins.

D.E.R. 354 Epoxy Resin may be used alone but is more frequently used in combination with standard bisphenol A liquid epoxy resins such as D.E.R. 330 Resin or D.E.R.[™] 331[™] Resin. By using suitable combinations of bisphenol A and bisphenol F epoxy resins, not only is the viscosity reduced but the tendency to crystallize is almost eliminated. See the Dow technical bulletin, *Crystallization of Liquid Epoxy Resins*, Form No. 296-01652.

A wide variety of curing agents is available to cure this resin at ambient conditions. Most frequently used are aliphatic polyamines, polyamides and modified versions of these. If anhydride or catalytic curing agents are employed, elevated temperature and long-post cures are required to develop full end properties.

Typical Applications This product is suitable for use in applications such as:

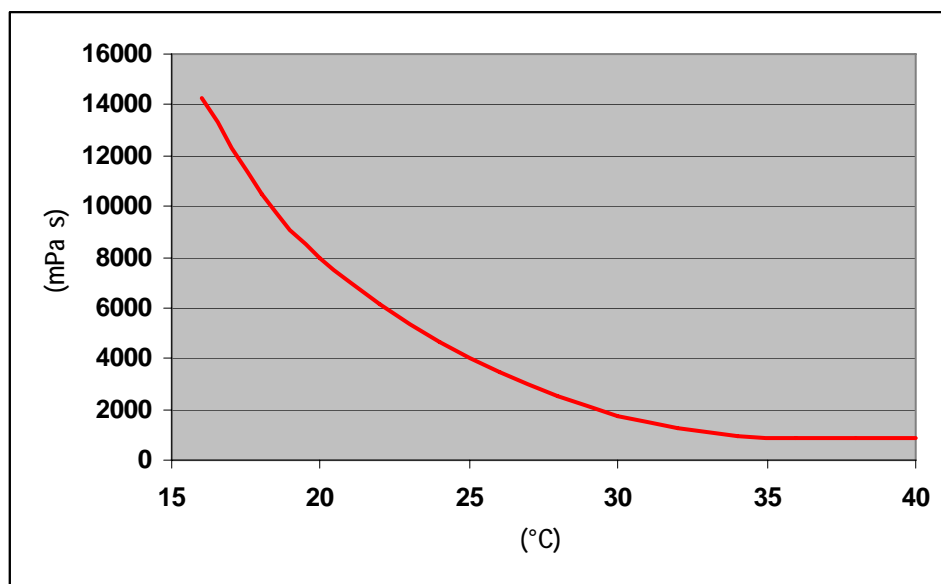
- Adhesives
- Casting and Tooling
- Civil Engineering
- Composites
- Coil Coatings
- Marine and Protective Coatings
- Photocure Coatings
- Potting and Encapsulation

Typical Properties

Property ⁽¹⁾	Value	Method
Epoxy Equivalent Weight (g/eq)	167 – 174	ASTM D-1652
Epoxy Percentage (%)	24.7 – 25.7	ASTM D-1652
Epoxy Group Content (mmol/kg)	5747 – 5990	ASTM D-1652
Color (Platinum Cobalt)	200 Max.	ASTM D-1209
Viscosity @ 25°C (mPa·s)	3400 – 4200	ASTM D-445
Hydrolyzable Chloride Content (ppm)	1000 Max.	ASTM D-1726
Water Content (ppm)	750 Max.	ASTM E-203
Density @ 25°C (g/ml)	1.19	ASTM D-4052
Shelf Life (Months)	24	

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

Viscosity / Temperature Profile



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 bulk or in 220 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 Dow technical bulletin, *Product Coding, Shelf-life and Storage Stability*, Form No. 296-01657.

NOTE: D.E.R.™ 354 Liquid Epoxy Resin can crystallize. This reversible, physical phenomena can be greatly avoided by storing the resin at temperatures not below 25°C. 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.

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D.E.R. 354 Liquid Epoxy Resin

Form No. 296-01451-1207X-TD

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 (except 30 days for PELLETHANE™ Polyurethane Elastomers);
- (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 liquid epoxy resin is regarded as a polymer according to the 6th Amendment of Council Directive 67/548/EEC and as a substance according to Council Directive 92/32/EEC of 30 April 1992; the 7th Amendment of that same directive. D.E.R.™ 354 Epoxy Resin has been reported to the EC Commission as a No-Longer Polymer (NLP), is registered under NLP # 500-108-2, 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.

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⁾		28064-14-4
Europe	EINECS	NLP # 500-108-2
United States	TSCA	28064-14-4
Canada	DSL	28064-14-4
Australia	AICS	28064-14-4
Japan	ENCS	7-2044
Korea	KECI	KE-28226
Philippines	PICCS	28064-14-4
China	SEPA	28064-14-4

(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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 +32-3-450-2815 (fax)
 Asia Pacific: +800-7776-7776[#]
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[#] except Indonesia and Vietnam

<http://www.dowepoxy.com>

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