



## D.E.H.<sup>TM</sup> 87 Epoxy Curing Agent

**Description** D.E.H.<sup>TM</sup> 87 Epoxy Curing Agent is a high molecular weight phenolic hardener based on an unmodified solid reaction product of liquid epoxy resin and bisphenol A.

**Introduction** D.E.H. 87 Epoxy Curing Agent is a phenolic hardener designed for powder coating applications. It is fully compatible with epoxy resins and can be formulated into decorative or protective powder coatings. However, D.E.H. 87 Epoxy Curing Agent was developed primarily for functional powder coating applications (FBE) requiring a high degree of flexibility and a good storage stability.

D.E.H. 87 Epoxy Curing Agent contains no flow modifier and curing accelerator. These additives must be added separately to the powder coating formulation. Imidazole and some of its derivatives are examples of effective accelerators for the curing of solid epoxy resins with D.E.H. 87 Epoxy Curing Agent.

The performance of phenolic cured epoxy powder coating formulations and particularly their adhesion to metal substrates will be greatly affected by the quality of the surface preparation. Suitable pre-treatments such as blast cleaning are suggested.

**Typical Applications** This product is suitable for use in powder coatings.

### Typical Properties

Property <sup>(1)</sup>	Value	Method
Hydroxyl Equivalent Weight (g/eq)	370 – 400	EG-C-QA-LM-7184
Color (Gardner) <sup>(2)</sup>	1 Max.	ASTM D-1544
Melt Viscosity @ 150°C (mPa•s)	1200 – 1600	ASTM D-4287
Softening Point (°C)	96 – 102	ASTM D-3104
Water Content (ppm)	4000 Max.	ASTM E-203
Shelf Life (Months)	12	

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

(2) 40 wt% in diethylene glycol monobutyl ether.

**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.

**Notice:** This epoxy curing agent is supplied as solid, flaked material in 25 kg polyethylene valve bags. The curing agent should be stored in a cool, dry place in its original closed packaging. Flakes may fuse if subjected to excess heat or compression. Stacking bags of D.E.H.<sup>TM</sup> Phenolic Hardener should be avoided whenever possible. Also see the corresponding sales specification or the Dow Technical Bulletin entitled, *Sintering of Low Molecular Weight Solid Epoxy Resins*, Form No. 296-01693.

Safety and Handling  
(continued)

This epoxy curing agent should retain its chemical properties for a period of at least 12 months. For further handling information consult the Dow brochure entitled, *DOW Epoxy Curing Agents Product Stewardship Manual, Safe Handling and Storage*, Form No. 296-01331.

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 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;
- (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

The main component of this phenolic curing agent is registered under CAS # 25036-25-3 and is regarded as a polymer according to Council Directive 92/32/EEC of 30 April 1992; the 7<sup>th</sup> 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 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 <sup>(1)</sup>		25036-25-3 / 80-05-7
Europe	EINECS	Polymer / 201-245-8
United States	TSCA	25036-25-3 / 80-05-7
Canada	DSL	25036-25-3 / 80-05-7
Australia	AICS	25036-25-3 / 80-05-7
Japan	ENCS	7-1279 / 4-123
Korea	KECI	KE-24070 / KE-23982
Philippines	PICCS	25036-25-3 / 80-05-7
China	SEPA	25036-25-3 / 80-05-7

(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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