D.E.R.™ 661
Solid Epoxy Resin

Description
D.E.R.™ 661 Solid Epoxy Resin is a low molecular weight solid reaction product of epichlorohydrin and bisphenol A.

Introduction
D.E.R. 661 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. 661 Solid Epoxy Resin can be formulated in solution to yield an excellent base for the formulation of high quality chemical resistant coatings, when cured with polyamine or polyamide curing agents. D.E.R. 661 Solid Epoxy Resin is also widely used for glass sizing applications.

D.E.R. 661 Solid Epoxy Resin offers, as standard, a narrower sales specification and additional specified items in comparison with D.E.R. 671 Solid Epoxy Resin. D.E.R. 661 Epoxy Resin is available in various solutions, e.g. under the designation D.E.R. 671-X75 Epoxy Resin Solution, a solution in xylene (75 wt%). The change in designation from D.E.R. 661 Epoxy Resin to D.E.R. 671 Epoxy Resin in this designation reflects the slight difference in epoxy equivalent range in the solution form. D.E.R. 661 Solid Epoxy Resin can also be used as a complimentary epoxy resin in non-epoxy coating systems to improve resistance properties.

Typical Applications
This product is suitable for use in applications such as:
- Automotive Coatings
- Can and Coil Coatings
- Marine and Protective Coatings

Typical Properties

<table>
<thead>
<tr>
<th>Property(1)</th>
<th>Value</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epoxide Equivalent Weight (g/eq)</td>
<td>500 – 560</td>
<td>ASTM D-1652</td>
</tr>
<tr>
<td>Epoxide Percentage (%)</td>
<td>7.7 – 8.6</td>
<td>ASTM D-1652</td>
</tr>
<tr>
<td>Epoxide Group Content (mmol/kg)</td>
<td>1780 – 2000</td>
<td>ASTM D-1652</td>
</tr>
<tr>
<td>Solution Viscosity @ 25°C (cSt)</td>
<td>165 – 250(2)</td>
<td>ASTM D-445</td>
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<tr>
<td>Melt Viscosity @ 150°C (cSt)</td>
<td>400 – 800</td>
<td>ASTM D-4287</td>
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<tr>
<td>Softening Point (°C)</td>
<td>75 – 85</td>
<td>ASTM D-3104</td>
</tr>
<tr>
<td>Color (Platinum Cobalt)</td>
<td>100 Max.(2)</td>
<td>ASTM D-1209</td>
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<tr>
<td>Shelf Life (Months)</td>
<td>24</td>
<td></td>
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</tbody>
</table>

(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.
Safety and Handling (continued)

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 may fuse if subjected to excess heat or compression. Stacking bags of D.E.R.™ Low Molecular Weight Solid Epoxy Resin should be avoided whenever possible. Also see the corresponding sales specification or further details in the Dow technical bulletin, *Sintering of Low Molecular Weight Solid Epoxy Resins*, Form No. 296-01693. This low molecular weight solid epoxy resin should retain its chemical properties for a period of at least 24 months.


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 (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 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.

For more information on the regulatory status of this product, please refer to the MSDS or SDS for this product.

Chemical Inventory Listing

<table>
<thead>
<tr>
<th>CAS Number(1)</th>
<th>25036-25-3</th>
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<tr>
<td>Europe</td>
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<td>TSCA</td>
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</tr>
</tbody>
</table>

(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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² except Indonesia and Vietnam

http://www.dowepoxy.com

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