D.E.R.™ 661-A80 Epoxy Resin Solution

Description

D.E.R. 661-A80 Epoxy Resin Solution is a low molecular weight reaction product of liquid epoxy resin and bisphenol A dissolved in acetone.

Introduction

D.E.R. 661-A80 Epoxy Resin Solution is a low molecular weight epoxy resin solution developed for use in high solids / high build coating formulations. This epoxy resin solution can provide the high solids and chemical resistance of liquid epoxy resins together with the adhesion, flexibility and fast cure of higher molecular weight resins.

D.E.R. 661-A80 Epoxy Resin Solution can form the basis of a two component coating system with either polyamine, polyamide or polyamidoamine curing agents, providing high quality coatings which are resistant to a number of chemical reagents. These coatings also exhibit the excellent mechanical properties normally associated with a 1-type solid epoxy resin, which finds usage in a variety of applications.

Typical Applications

This product is suitable for use in automotive and protective coatings.

Typical Physical Properties

These properties are typical but do not constitute specifications.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epoxide Equivalent Weight (g(eq))</td>
<td>475 – 575(1)</td>
<td>ASTM D-1652</td>
</tr>
<tr>
<td>Epoxide Percentage (%)</td>
<td>7.5 – 9.1(1)</td>
<td>ASTM D-1652</td>
</tr>
<tr>
<td>Epoxide Group Content (mmol/kg)</td>
<td>1740 – 2110(1)</td>
<td>ASTM D-1652</td>
</tr>
<tr>
<td>Color (Gardner)</td>
<td>2 Max.</td>
<td>ASTM D-1544</td>
</tr>
<tr>
<td>Viscosity @ 25°C (mPa•s)</td>
<td>3500 – 8500</td>
<td>ASTM D-445</td>
</tr>
<tr>
<td>Density @ 25°C (g/ml)</td>
<td>1.1</td>
<td>ASTM D-4052</td>
</tr>
<tr>
<td>Non-volatile Content (wt%)</td>
<td>79 – 81</td>
<td>DowM 101188</td>
</tr>
<tr>
<td>Solvent</td>
<td>Acetone</td>
<td></td>
</tr>
<tr>
<td>Shelf Life (Months)</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>

(1) Based on solids.

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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**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 base epoxy resin component of this epoxy resin solution 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 which form the basis of this product are listed on EINECS.

The methyl amyl ketone solvent component in this epoxy resin solution is listed on EINECS under the registration number 203-767-1.

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</th>
<th>Europe</th>
<th>United States</th>
<th>Canada</th>
<th>Australia</th>
<th>Japan</th>
<th>Korea</th>
<th>Philippines</th>
<th>China</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>EINECS</td>
<td>TSCA</td>
<td>DSL</td>
<td>AICS</td>
<td>ENCS</td>
<td>KECI</td>
<td>PICCS</td>
<td>SEPA</td>
</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.

Safe Handling Information

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 solid epoxy resin solution is supplied in bulk or in 215 kg tight-head drums. The resin solution should be stored in a dry place in its original closed packaging. This low molecular weight solid epoxy resin solution 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.

The Dow Chemical Company Material Safety Data Sheets (MSDS) contain pertinent information that you may need to protect your employees and customers against any known health or safety hazards associated with our products. Under the OSHA Hazard Communication Standard, workers must have access to and understand MSDS on all hazardous substances to which they are exposed. Thus, it is important that you provide appropriate training and information to your employees and make sure they have available to them MSDS on any hazardous products in their workplace.

The Dow Chemical Company sends MSDS on non-OSHA-hazardous as well as OSHA-hazardous products to its customers upon initial shipment, including samples. If you do not have access to one of these MSDS, please contact your local Dow representative for a copy.

Updated MSDS are sent upon revision to all customers of record. In addition, MSDS are sent annually to all customers receiving products deemed hazardous under the Superfund Amendments and Reauthorization Act.

MSDS should be obtained from suppliers of other materials recommended in this bulletin.

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