

EPON™ Resin 813

General Description

EPON™ Resin 813 is a low viscosity liquid bisphenol-A based epoxy resin diluted with cresyl glycidyl ether. It finds application in such areas as:

- Adhesives
- Electrical casting and encapsulation
- Contact and vacuum bag laminating
- Flooring
- Grouting compounds
- High solids and solventless coatings

EPON Resin 813 Features

- Low viscosity for easy pumping and handling
- Reacts with full range of curing agents at low temperatures
- Produces high-strength cured systems resistant to chemical attack
- Slightly lower odor than butyl glycidyl ether diluted epoxy resins (EPON Resin 815C type)
- Less prone to crystallization than other diluted epoxy resins

Typical Properties

Epoxide equivalent weight^a	180-195
Viscosity, Poise at 25 °C^b	5-7
Color, Platinum-Cobalt^c	75 max.
Physical form	Liquid
Pounds/gallon, 25 °C	9.5
Density, g/ml, 25 °C	1.14
Flash point, °F^d	>199
Vapor pressure, mm hg, 20 °C^e	Negligible

^aGrams of resin containing one gram equivalent of epoxide. ASTM D 1652 (Epoxy Content of Epoxy Resins - Perchloric Acid Method)

^bASTM D 445 (Determination of the viscosity of liquids by Ubbelohde Viscometer).

^cASTM D 1209-84 (Test for Platinum-Cobalt color).

^dASTM D 3278-82 (Setaflash method).

^eVapor pressure of pure cresyl glycidyl ether.

Benefits of Using EPON Resin 813

EPON Resin 813 provides several benefits compared to higher viscosity resins. It is easier to handle and flows out and wets surfaces better. In addition, entrained air escapes more easily

Benefits of Using EPON Resin 813 (cont.)

from systems during cure, producing almost bubble-free products. Higher concentrations of filler can be used with EPON Resin 813 giving cured systems reduced cost, lower cure shrinkage, lower coefficient of thermal expansion and higher compressive strength.

EPON Resin 813 can be used with all of the curing agents common to EPON Resin 828 systems. This permits a full range of curing temperatures, pot life and handling characteristics to choose from. The EPON Resin 828 curing systems are described in Technical Bulletin SC:235-90.828.

EPON Resin 813 systems give excellent service at moderate temperatures for long periods. They are commonly used in formulations for electrical castings and encapsulations and adhesives. They are especially useful in contact and pressure vacuum bag laminating, giving superior wet out and glass loading of up to 70%. They provide high adhesive strength to a variety of metal and non-metal surfaces. The rapid room temperature cure of EPON Resin 813 with aliphatic amines makes it ideal for adhesives for fabrication, tooling, grouting compounds, and high solids and solventless coatings.

FDA Status

EPON Resin 813 is not listed in 21 CFR 175.300 and is not recommended for food contact applications.

Identification and Classification

Chemical Abstract Service Registry Number:

No CAS Registry number has been assigned to EPON Resin 813 since the product is a mixture. CAS Registry numbers for components of EPON Resin 813 include:

- Base Resin: 25068-38-6
- Reactive diluent (Cresyl Glycidyl Ether): 2210-79-9

Material Safety Data Sheet Number: 20

Generic Name: Modified liquid Bisphenol A-Epichlorhydrin based epoxy resin

Packaging, Storage and Shipping

- EPON Resin 813 is a low viscosity diluted epoxy resin that is available in tank cars, tank trucks and 500 pound net closed head drums.
- While EPON Resin 813 is less prone to crystallize in storage when compared to other diluted epoxy resins, if crystallization does occur it may be reliquidified by warming to 120 °F. Product should be stored above 40 °F to minimize this problem.
- EPON Resin 813 is not a hazardous material according to Department of Transportation regulations (Code of Federal Regulations, Title 49).

Formulation and Application Information

- For epoxy resin amine-cured coatings, consult Technical Bulletin SC:193, entitled "Formulating Amine-Cured Coatings with EPON™ Resins."
- For adhesives, laminating, casting and molding applications, consult Technical Bulletin SC:67, entitled "EPON™ Resin Structural Reference Manual."

For product prices, availability, or order placement,
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For sales in North and South America outside the United States, call:
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