

Technical Data Sheet

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EPON™ Resin 1004F

Product Description

EPON™ Resin 1004F is a solid epoxy resin derived from bisphenol-A and epichlorohydrin. This medium molecular weight epoxy resin has an average of 4.5-5.0 hydroxyl groups per molecule plus the terminal epoxy groups. These epoxy and hydroxyl groups are usually reacted with vegetable oil acids to prepare epoxy resin esters. Epoxy esters derived from EPON Resin 1004F find application as vehicles in appliance primers, automotive primers, and in maintenance coatings. EPON Resin 1004F may be used as a partial replacement for other EPON Resins in amine or polyamide cured epoxy air dry finishes and in phenolic and amino modified epoxy baking systems.

Benefits

- EPON Resin 1004F contains a specific amount of esterification catalyst to control esterification reactions with vegetable oil acids.
- EPON Resin 1004F is supplied in very large lots (greater than 100M pounds) with uniform properties.
- EPON Resin 1004F provides special solution viscosity and reactivity properties when combined with other EPON Resins in air dry amine or polyamide cured epoxy coatings and in epoxy-phenolic or amino converted baking systems.

Sales Specification

Property	Units	Value	Test Method/Standard
Weight per Epoxide	g/eq	800-950	ASTM D1652
Viscosity at 25°C ¹	cP	15-25	ASTM D445
Color	Pt-Co	200 max.	ASTM D1209
Epichlorohydrin	mg/kg	10	SMS 2445

¹ 40% weight solution in MEK

Typical Properties

Property	Units	Value	Test Method/Standard
Weight per gallon	lbs	10.2	ASTM D1475
Melt viscosity, @ 150 °C	cSt	4000-6000	Cannon-Fenske
Esterification equivalent weight ¹		175	

Flash point, Setaflash	°F	>200	ASTM D3278
Bulk Density	lbs/ft ³	36-40	

¹Grams of resin required to esterify completely one gram-equivalent of monobasic acid, e.g., 280 grams of C18 fatty acid or 60 grams of acetic acid.

Processing/How to use

Identification and Classification

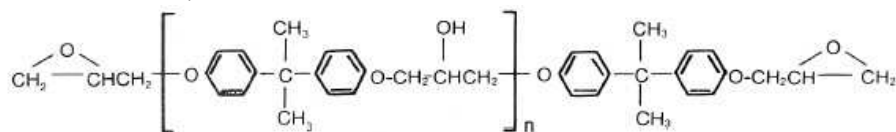
Chemical Abstract Service Registry Number: 25036-25-3 (EPA inventory designation)

MSDS Number: 267-1

Chemical Designations:

- 2,2-bis(p-glycidyloxyphenyl) propane condensation product with 2,2-bis(p-hydroxyphenyl) propane and similar isomers.
- Diglycidyl ether of bisphenol-A condensation products with bisphenol-A and other related materials.

Structural formula, base resin:



Where n = an average of 4.5-5.0

Packaging, Storage and Shipping

- EPON Resin 1004F is a stable material produced in flake form and packaged in a 50-pound net three ply natural kraft paper bag. The product is not prone to sintering or “blocking.” It should be stored in a covered area protected against moisture
- EPON Resin 1004F is not a hazardous material according to the Department of Transportation regulations (Code of Federal Regulations, Title 49).

Formulation and Application Information

- For manufacture of epoxy resin esters consult Technical Brochure SC:197 entitled “EPON Resin Esters.”
- For ambient cured epoxy resin-amine or polyamide cured coatings consult Technical Brochure SC:193, entitled “Formulating Amine-Cured Coatings with EPON Resins.”
- For phenolic and amino converted epoxy resin baking finishes consult Technical Brochure SC:218, entitled “EPON and EPONOL™ Resins Converted Baking Finishes Formulated with Phenolic and Amino

Resins.”

FDA Status

Several paragraphs in Title 21 of the Code of Federal Regulations permit and regulate the use of epoxy resins such as cured EPON Resin 1004F as indirect food additives in food contact applications. Examples are: 175.105, 175.300, 175.320, 176.170, 176.180, 176.1210, and 177.2280

Curing agents and modifying materials for EPON Resin systems are also regulated under several sections of Title 21, for example 175.300 and 177.2280, and are subject to the limitations imposed by these sections and the general requirements of good manufacturing practices.

Safety, Storage & Handling

Please refer to the MSDS for the most current Safety and Handling information.

Please refer to the Hexion web site for Shelf Life and recommended Storage information.

Exposure to these materials should be minimized and avoided, if feasible, through the observance of proper precautions, use of appropriate engineering controls and proper personal protective clothing and equipment, and adherence to proper handling procedures. **None of these materials should be used, stored, or transported until the handling precautions and recommendations as stated in the Material Safety Data Sheet (MSDS) for these and all other products being used are understood by all persons who will work with them.** Questions and requests for information on Hexion Inc. ("Hexion") products should be directed to your Hexion sales representative, or the nearest Hexion sales office. Information and MSDSs on non-Hexion products should be obtained from the respective manufacturer.

Packaging

Available in bulk and drum quantities.

Contact Information

For product prices, availability, or order placement, please contact customer service:

www.hexion.com/Contacts/

For literature and technical assistance, visit our website at: www.hexion.com

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