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**Technical Data Sheet**

Re-issued March 2005

EPON™ Resin 862

**Product Description**

EPON™ Resin 862 (Diglycidyl Ether of Bisphenol F) is a low viscosity, liquid epoxy resin manufactured from epichlorohydrin and Bisphenol-F. This resin contains no diluents or modifiers. EPON Resin 862 may be used as the sole epoxy resin or combined with other resins such as EPON Resin 828. When blended with EPON Resin 828, EPON Resin 862 provides a technique to reduce viscosity with no sacrifice in chemical and solvent resistance properties, and the blended resin will exhibit improved crystallization resistance properties when compared to the neat, liquid, Bisphenol-A or Bisphenol-F type resins. When EPON Resin 862 is cross-linked with appropriate curing agents, superior mechanical, adhesive, electrical and chemical resistance properties can be obtained.

**Application Areas/Suggested Uses**

- Solventless or high solids/low VOC maintenance and marine coatings
- Chemical resistant tank linings, floorings, and grouts
- Fiber reinforced pipes, tanks, and composites
- Tooling, casting, and molding compounds
- Construction, electrical, and aerospace adhesives

**Benefits**

- Low viscosity
- Low color
- Reacts with a full range of epoxy curatives
- Good balance of mechanical, adhesive, and electrical properties
- Good chemical resistance
- Superior physical properties vs. diluted (6 Poise) resins

**Sales Specification**

Property	Units	Value	Test Method/Standard
Weight per Epoxide	g/eq	165 – 173	ASTM D1652
Viscosity at 25°C	P	25 – 45	ASTM D445
Color	Pt-Co	200 max.	ASTM D1209

**Typical Properties**

Property	Units	Value	Test Method/Standard
Density at 25°C	lb/gal	9.8	ASTM D1475

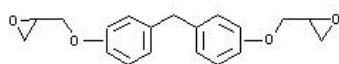
**Processing/How to use**

**General Information**

**Chemical Identification and Classification**

- Chemical Abstract Service Registry Number: 28064-14-4 (EPA/TSCA Inventory designation)
- Chemical designation: Bisphenol-F/epichlorohydrin epoxy resin

Chemical Structure (ideal)

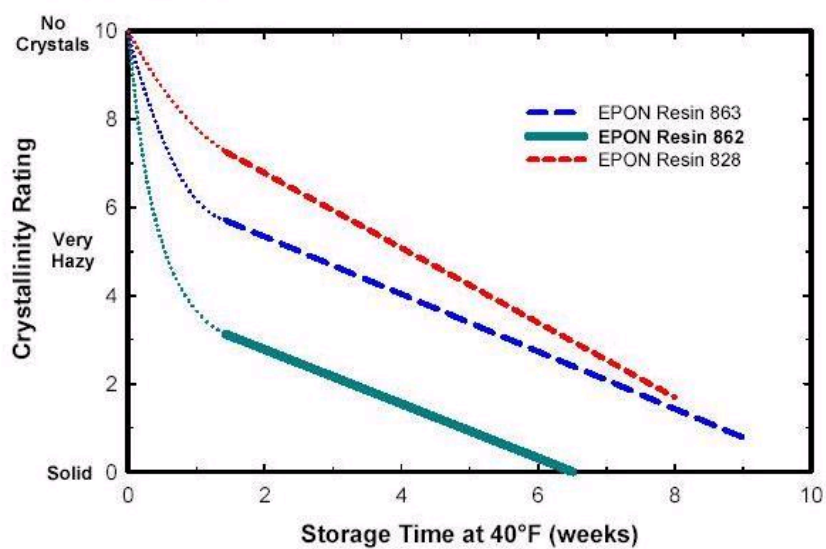


**Benefits of Using EPON Resin 862**

- Reduced diluent levels to achieve specific viscosity targets
- Higher solids or reduced solvent levels for coatings
- Improved handling and flow in colder application environments
- Improved fiber and filler wetting

**Crystallization Resistance**

Figure 1 / Crystallinity Rating of Epoxy Resins Under Accelerated Testing<sup>1</sup>



<sup>1</sup> RPP test method SMS 2018 (diluted to 6 Poise and seeded with epoxy

crystals

**Suggestions for Customers Experiencing Crystallization**

Crystallization of BPF epoxy resins is possible in the temperature range between the glass transition point (-10 to -20°C/14 to -4°F) and the general melting range (typically 30 to 60°C/86 to 140°F). BPF resins modified with HELOXY Modifiers 7, 8, and 61 show a greater tendency to crystallize and should not be stored cold. If aromatic modifiers are acceptable, HELOXY Modifier 62 (Cresyl Glycidyl Ether) has been shown to give more resistance to crystallization than the aliphatic HELOXY Modifiers. In general, the crystallization behavior for EPON Resin 862 follows these trends:

- EPON Resin 828 and EPON Resin 863 have better crystallization resistance than EPON Resin 862.
- The crystallization resistance of EPON Resin 862 is generally better than standard BPA epoxy (EPON Resin 828) when diluted to equivalent viscosities.
- The crystallization resistance of the unmodified BPA epoxy is retained when blended with EPON Resin 862 or EPON Resin 863 for reduced viscosity.

For BPF resins that have crystallized, heat the tank, drum, or pail contents to 140 to 150°F (60 to 66°C) until all visual evidence of crystallization is gone. All associated piping, pumps, etc. also needs to see this heat exposure to remove any crystals from the system that could nucleate additional crystal growth. For heated storage, the lowest effective temperature should be used. When necessary to heat EPON Resin 862 for extended periods of time, it is recommended that an inert gas blanket the resin surface.

**Viscosity Properties**

Figure 2 / Effect of Temperature on EPON Resin 862 and Blends with EPON Resin 828

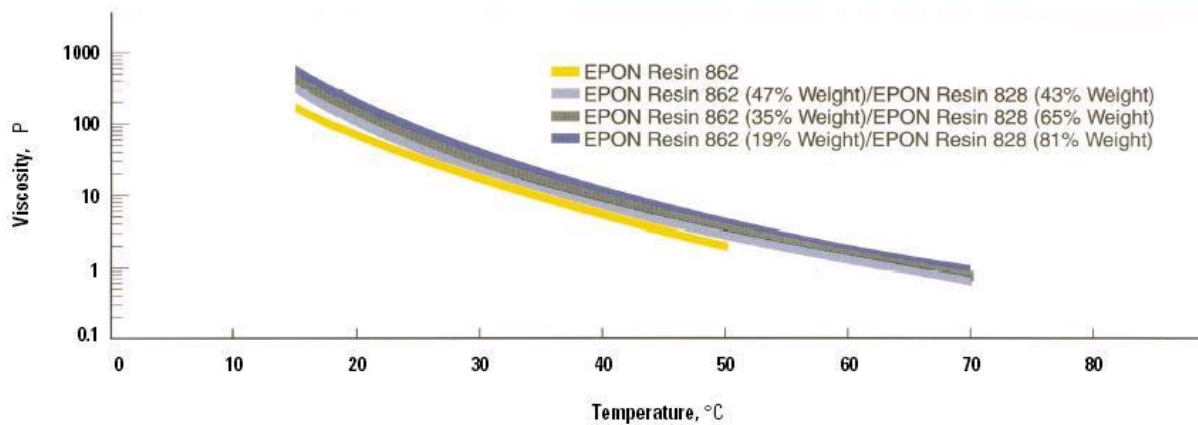


Figure 3 / Viscosity of EPON Resin 862 / EPON Resin 828 Blends at 25°C

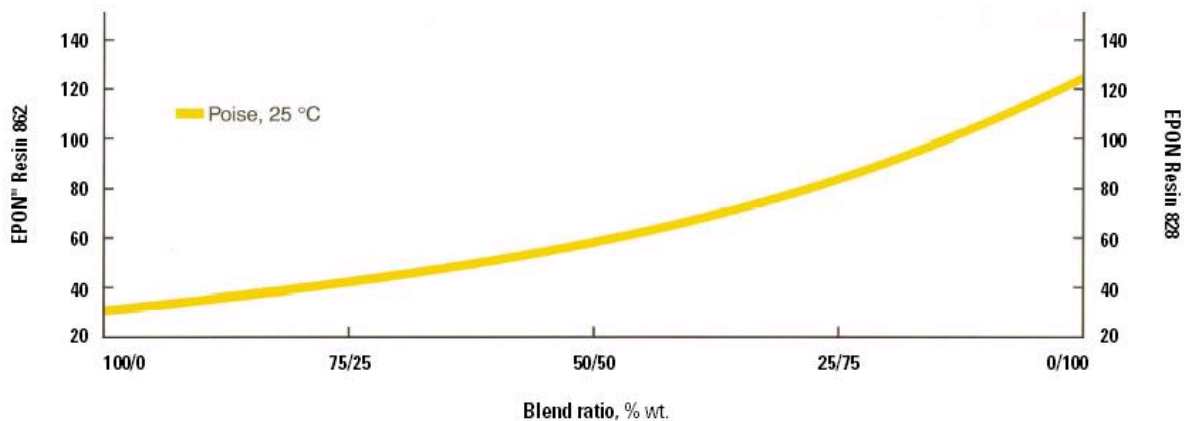


Figure 4 / Viscosity of EPON Resin 862 / EPON Resin 155 Blends at 25°C

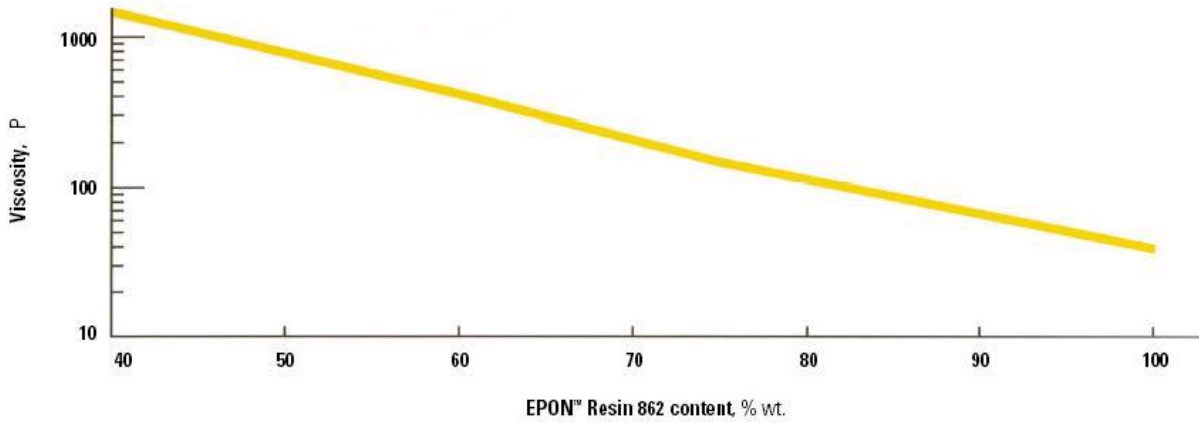


Figure 5 / Viscosity of EPON Resin 862 and EPON Resin 828 at 25°C, when diluted with HELOXY Modifier 61

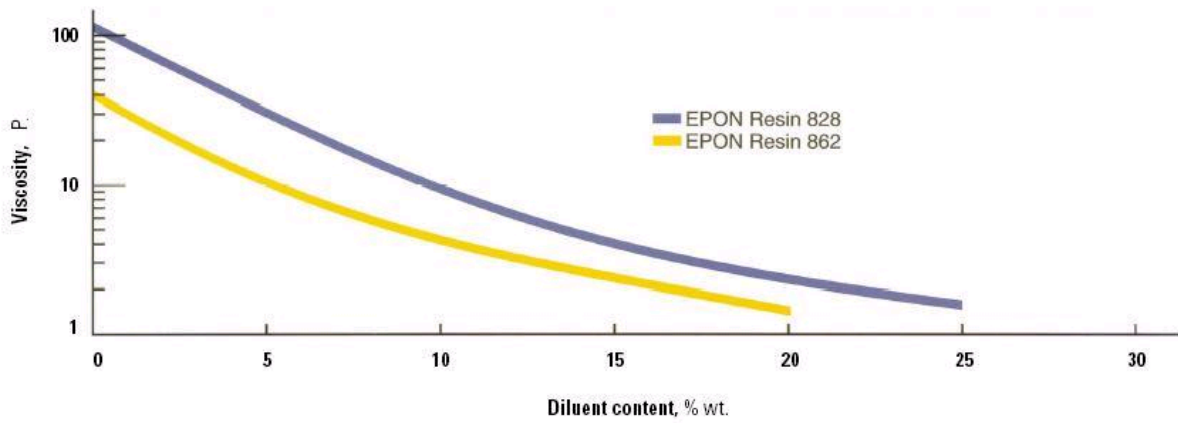
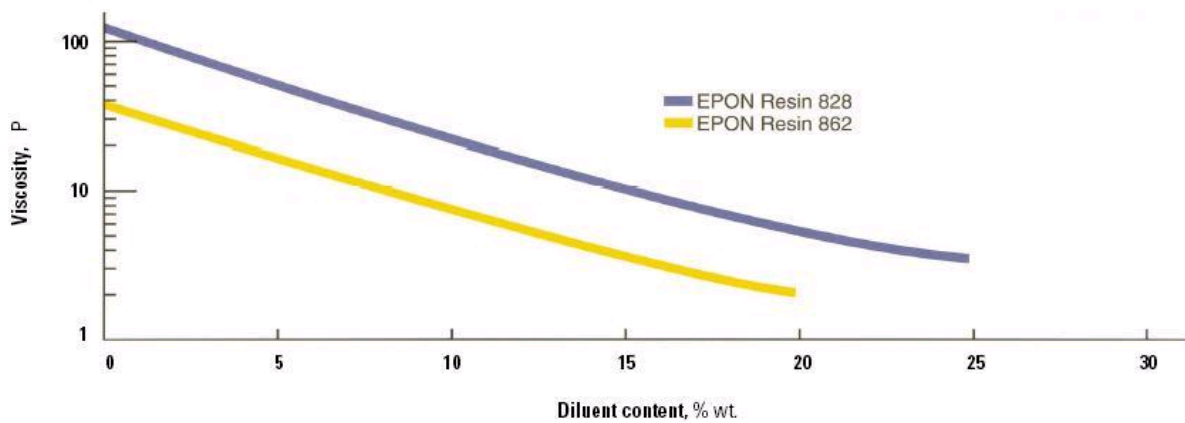


Figure 6 / Viscosity of EPON Resin 862 and EPON Resin 828 at 25°C, when diluted with HELOXY Modifier 8



**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.

EPON Resin 862 should be stored in tightly sealed containers of metal, glass, or polyolefin plastic at normal room temperatures. If EPON Resin 862 develops haziness or crystallizes during storage, it can be restored to its original condition by gently warming the container and its contents to approximately 170-190°F until all visual evidence of crystallization is gone. Upon cooling to normal ambient temperature conditions, the product will regain its original liquid state physical properties. This process can be repeated as necessary.

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 Specialty Chemicals, 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, call our toll-free customer service number at: 1-877-859-2800

For literature and technical assistance, visit our website at: [www.hexion.com](http://www.hexion.com)

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