

Advanced Materials

Araldite[®] EPN 9820 Resin

A LOW VISCOSITY EPOXY PHENOL NOVOLAC RESIN

GENERAL:

Araldite[®] EPN 9820 resin, alone or blended with epoxy resins based on bisphenol A or bisphenol A / F in combination with polyamine hardeners, is recommended for solvent-free coatings, impregnations, floorings and trowelling compounds applied to steel and concrete substrates. Also, when combined with aromatic diamines, EPN 9820 is suitable for advanced composite applications manufactured through RTM filament winding.

The reactivity of formulations of Araldite[®] EPN 9820 resin corresponds roughly to that of unmodified bisphenol A epoxy resins.

The chemical resistance of systems based on Araldite[®] EPN 9820 resin is similar to that of liquid bisphenol A epoxy resins, and considerably better than that of resins modified with reactive diluents.

Under adverse storage conditions, Araldite[®] EPN 9820 resin may crystallize. The crystallization can be reversed by heating the resin to 40°C while stirring. Araldite[®] EPN 9820 resin is miscible in all proportions with other epoxy resins. Addition of at least 25% of bisphenol A epoxy resin or of epoxy phenol novolac will practically eliminate the tendency to crystallize. Araldite[®] EPN 9820 resin is sanctioned by FDA 175.300 CFR for contact with food.

APPLICATIONS:

Araldite[®] EPN 9820 resin, alone or blended with epoxy resins based on bisphenol A or bisphenol A / F in combination with polyamine hardeners, is recommended for solvent-free coatings, impregnation, floorings and trowelling compounds applied to steel and concrete substrates

- Advanced composite structures
- Adhesives
- Resin transfer molding
- Filament winding

ADVANTAGES:

- Low viscosity
- Higher functionality than bisphenol A epoxy resins
- Excellent chemical resistance
- Outstanding resistance to solvents
- Excellent mechanical properties
- Good flexibility

TYPICAL PROPERTIES*:

Visual Appearance	Clear, no contamination
Color, Gardner, max	5
Epoxy Equivalent, g/eq.	163 - 172
Viscosity @ 25°C (77°F), mPa s (cPs)	2000 - 3000
Density @ 25°C (77°F), g/cm ³ (lb/gal.)	1.19 (9.9)
Flash Point, Closed Cup, °C (°F)	>93 (>200)

* Typical properties are based on Huntsman's test methods. Copies are available upon request.

FORMULATIONS:

Components	Parts by weight	
Araldite [®] EPN 9820 Resin	100	100
Aradur [®] 837 Hardener	40	-
Aradur [®] 2963 Hardener	-	50
Viscosity @ 25°C (DIN 53015), cPs	3600	450
Gel time (TECAM [®] , 100 mL, 20°C), min	20	40

Components	Parts by weight	
Araldite [®] EPN 9820 Resin	100	
Aradur [®] 5200 Hardener	26	

Cured Neat Resin Properties

Curing Schedule, time/°C	2hr/80 + 2hr/150
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Glass Transition Temperature

DSC, °C	125
DMA, °C	126

Testing conditions	25°C	80°C
Flexural Test		
Flexural Strength, ksi (MPa)	17.1 (118)	11.1 (77.3)
Flexural Modulus, ksi (GPa)	409 (2.8)	324 (2.2)

FDA STATUS:

Araldite[®] EPN 9820 resin is included in Section 175.300 of the Code of Federal Regulations (21 CFR 175.300).

PACKAGING & STORAGE:

Araldite[®] EPN 9820 resin is supplied in 484-pound steel drums. This material should be stored at room temperature in the original sealed containers (actual expiration date appears on the label).

HANDLING/SAFETY PRECAUTIONS:

Warning! Causes irritation. May cause allergic skin reaction.

Avoid contact with eyes, skin or clothing.
Avoid breathing vapor-mist or spray.
Use with good ventilation.
Wash after handling.
Store in a cool, dry area in closed containers.

**Read Material Safety Data Sheet Before Using.
For Industrial Use Only.**

FIRST AID:**In case of contact:**

Eyes: Immediately flush with water for at least 15 minutes.

Skin: Promptly wash thoroughly with mild soap and water.

Inhalation: Remove to fresh air. Give oxygen if breathing is difficult.

Ingestion: In conscious, give plenty of water and get immediate medical attention.

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