

Cardolite[®] NX-4001

CNSL Novolac Resin

Preliminary Technical Datasheet

DESCRIPTION

Cardolite NX-4001 is a solvent-free, high viscosity cardanol based novolac resin designed as a cross-linking agent for epoxy resins and particularly suitable for hot melt pre-pregs. This product is specifically engineered to have low odor and good miscibility with epoxy and epoxy-novolac resins. It is characterized by a high functionality and high equivalent weight with good moisture and chemical resistance and improved flexibility and toughness. In addition, NX-4001 enables high biocontent formulations.

PROPERTIES

PROPERTY	TYPICAL VALUE	TEST METHOD
Appearance	Dark Brown Liquid	Visual
Color (Gardner)	14 - 18	ASTM D1544
Viscosity @ 40°C (cPs)	90,000 – 120,000	ASTM D2196
Hydroxyl Equivalent Weight ¹	295 - 316	Calculated
Density @ 25°C (kg/L) (lbs/gal)	0.95 – 1.00 7.84 – 8.35	ASTM D1475
Recommended Use Level	15 - 30	-

Typical properties are not to be construed as specifications

¹Based on total product weight

APPLICATIONS

- Composites based on epoxy chemistry
- Wet Layup
- Pultrusion
- Hot Mold formulations
- Vacuum assisted processes
- High temperature cure composites
- Composites for automotive, sports & leisure, and construction
- Natural fiber composites

ADVANTAGES

- Good processability
- Excellent formulation latitude
- Good chemical resistance
- Very long pot life
- Good mechanical properties
- High in biocontent
- Compatible with most epoxy resins and novolac-epoxy resins
- Non-toxic
- Based from natural, renewable, non-food chain raw material feedstock

TYPICAL PERFORMANCE PROPERTIES

PROPERTIES ¹	TYPICAL VALUE	TEST METHOD
Use Level with Epoxy Resin	20	-
Glass transition temperature (°C) ²	118	ASTM 3418-99

¹ Properties have been measured on a standard formulation of: 80% Liquid Epoxy Resin (EEW=188), 20% NX-4001, and 2,9 pbw 2-ethyl,4-methylimidazole, cured at 120°C for 2 hrs.

² DSC scan from 0 to 200°C, 2nd run

REGULATORY STATUS

Please refer to the material safety data sheet (MSDS). Specific information regarding chemical inventory listing can be obtained from your local sales representative.

SAFETY PRECAUTIONS

Please refer to the material safety data sheet (MSDS). Copies of the MSDS can be requested on the Cardolite website or via your local sales representative.

STABILITY AND STORAGE

Cardolite products may absorb moisture and carbon dioxide when left in open containers, which could result in increased viscosity, discoloration, reduction of reactivity, and/or crystallization of the products. These products should be kept tightly sealed in their original containers when not in use, and stored in a cool, dry place.

CONTACT INFORMATION



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