Cardolite® NX-5619
Epoxy Curing Agent
Composite & Adhesive Applications

DESCRIPTION

Cardolite NX-5619 is a solvent-free, low viscosity phenalkamine curing agent designed for ambient and low temperature cure with liquid epoxy resins and epoxy based fiber reinforced composites. It is specifically designed to have a low odor, very good fiber wetting and to be applicable in a variety of different production processes. NX-5619 is characterized by long pot life, excellent resistance to water, alkali and acid solutions.

PROPERTIES

PROPERTY	TYPICAL VALUE	TEST METHOD
Color (Gardner)	≤ 12	ASTM D1544
Viscosity @ 25°C (cPs)	475 - 700	ASTM D2196
Amine Value (mg KOH/g)	345 - 370	ASTM D2074
Volatile Loss (% weight)	≤ 2.0	ASTM D2369-98
Density @ 25°C (kg/L) (lbs/gal)	0.98 - 1.00 8.21 - 8.31	ASTM D1475

PROPERTY	TYPICAL VALUE	TEST METHOD
Appearance	Light Yellow Liquid	Visual
Theoretical Active Hydrogen Equivalent (AHEW)[1]	104	Calculated
Recommended Use Level (phr, EEW 190)[2]	50	-

Typical properties are not to be construed as specifications
[1] Based on total product weight
[2] With Liquid Epoxy Resin (EEW = 190 g/eq)

APPLICATIONS

- Composites based on epoxy chemistry
- Vacuum assisted composite processing
- Resin Transfer Molding
- Wet Lay Up and Lamination
- Composite Adhesives

ADVANTAGES

- Good processability
- Excellent resistance to alkali and acid solutions
- Good reactivity at room temperature
- Moisture tolerant during cure
- Compatible with most epoxy resins, diluents and their blends
- Non-critical mix ratio
- Non-toxic and non-corrosive
- Based from natural, renewable, non-food chain raw material feedstock

TYPICAL HANDLING PROPERTIES

PROPERTIES	TYPICAL VALUE	TEST METHOD
Use Level with Liquid Epoxy Resin (pbw, EEW 190)	50	-
Mix viscosity @ 25°C (cPs)	3,450	ASTM D2196
Mix viscosity @ 40°C (cPs)	750	ASTM D2196
Pot Life, 100 g mix @ 25°C (min)	90	Internal Method[1]
Pot Life, 100 g mix @ 40°C (min)	45	Internal Method[1]

[1]Pot Life is measured when the formulation reaches a limit viscosity of 10,000 cps at the reference temperature.

TYPICAL PERFORMANCE PROPERTIES

PROPERTIES	TYPICAL VALUE[1]	TEST METHOD
Glass transition temperature (°C)[2]	86	ASTM 3418-99
Tensile strength (MPa)	54	ASTM D638-10
Tensile modulus (MPa)	2,450	ASTM D638-10
Tensile elongation (%)	4.3	ASTM D638-10
Flexural strength (MPa)	72	ISO 178
Flexural modulus (MPa)	1,860	ISO 178

[1]Curing schedule: 4h@RT + 2h@100°C, Base resin: Liquid epoxy (EEW=190)
[2]DSC scan from 0 to 200°C, 2nd run

CHEMICAL RESISTANCE

CHEMICAL IMMERSION @ 25°C ASTM D543	FORMULATION A	FORMULATION B
Use Level with Liquid Epoxy Resin (pbw, EEW 190)	100	100
Cardolite NX-5619	50	-
JEFFAMINE® D-230 Polyetheramine	-	31

CHEMICALS	FORMULATION A (WEIGHT INCREASE %)				FORMULATION B (WEIGHT INCREASE %)			
Time elapsed	3 days	7 days	14 days	100 days	3 days	7 days	14 days	100 days
Deionized water	0.27	0.36	0.51	0.80	0.37	0.49	0.66	1.28
10% sodium hydroxide	0.28	0.47	0.49	0.80	0.32	0.48	0.71	1.28
3% sulfuric acid	0.38	0.52	0.71	1.17	2.77	3.83	5.15	10.00

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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