

CYMEL[®] NF 3041 crosslinking agent

March 2017

**PRODUCT DESCRIPTION**

CYMEL NF 3041 crosslinking agent is a formaldehyde-free, partially n-butylated crosslinking agent supplied in n-butanol. It was designed primarily for use in 2 component, ambient cure, solvent-borne conversion varnishes for industrial wood. Systems containing CYMEL NF 3041 crosslinking agent exhibit superior catalyzed pot life, relative to typical urea-based conversion varnishes, and require significantly less catalyst to effect cure. The resulting coatings have excellent appearance, early hardness, resistance properties, and hot/cold cycle flexibility.

BENEFITS

- Does not contain formaldehyde
- Does not emit formaldehyde during curing process
- Excellent compatibility with a variety of OH functional crosslinking agents
- Fast cure response in ambient and heat cure applications
- Extended catalyzed coating stability or pot life

APPLICATION AREAS

- Industrial wood coatings
- Coil primers and back coatings

PHYSICAL PROPERTIES

Property	Range	Method
Appearance	Clear Liquid	ASTM E284
Non-volatile by wt.	62-66%	DIN 55671 (Foil, 45 min/45°C)
Viscosity, 25°C	300 – 1000 mPa·s	DIN EN ISO 3219
Color, APHA	≤ 500	DIN EN ISO 6271

TYPICAL PROPERTIES (NOT CONTINUALLY DETERMINED)

Property	Range	Method
Density, 25°C	8.3-8.6 lbs/gal	ASTM D1475-13

SOLUBILITY

Alcohols	Soluble
Esters	Soluble
Ketones	Soluble
Aromatic hydrocarbons	Soluble
Water	Insoluble

COMPATIBILITY

Acrylic crosslinking agents	Excellent
Alkyd crosslinking agents	Excellent
Polyester crosslinking agents	Excellent
Epoxy crosslinking agents	Excellent
Nitrocellulose	Excellent

BACKBONE POLYMER SELECTION

CYMEL NF 3041 crosslinking agent is a very effective for alkyd, polyester and acrylic polymers containing primary hydroxyl functionality. Reactivity with secondary hydroxyl sites is limited under ambient cure. CYMEL NF 3041 crosslinking agent has a high T_g and should be paired with softer polyols (T_g < 30°C) to avoid film checking or cracking. The equivalent weight of CYMEL NF 3041 is ~110 g/eq (solids basis). Binder ratios can vary from 85/15 to 70/30 depending upon the equivalent weight of the polyol.

CATALYSIS

For ambient or low bake applications with alkyd resins, it is recommended to use 2.0% CYCAT[®] 500 based on weight of total binder solids. Other polyols, like acrylic resins and polyester resins, can tolerate CYCAT 4040 catalyst without blooming. The acidity of other formulation components may affect the reaction rate and should be evaluated in combination with the catalyst.

FORMULATION STABILITY

Catalyzed pot life can be extended by the addition of 10 to 20% primary alcohol on total binder solids. Methanol or ethanol is preferred to ensure early hardness development and sandability. The coatings demonstrate very good flow, gloss, early film hardness, early print resistance and chemical resistance.

STORAGE STABILITY

CYMEL NF 3041 crosslinking agent has a shelf life of 365 days from the date of manufacture when stored at temperatures below 32°C. Although lower temperatures are not detrimental to stability, the viscosity of the product will increase possibly making the crosslinking agent difficult to pump or pour. Product viscosity can be returned to normal by gentle warming, however, care should be taken to avoid excessive localized heating as this can result in an irreversible increase in viscosity.

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