

# CYMEL<sup>®</sup> 385 resin

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## PRODUCT DESCRIPTION

CYMEL 385 resin is a methylated high imino melamine resin with a low degree of alkylation. Being supplied in water, it is recommended as a crosslinking agent for hydroxyl-containing emulsion polymers and other aqueous systems containing hydroxyl or amide functionality. CYMEL 385 resin has a high tendency to self-condense and may be used to increase the hardness and resistance properties of thermoplastic waterborne polymers.

## BENEFITS

- Very fast cure response
- Water soluble
- Low formaldehyde release

## APPLICATION AREAS

- Emulsion topcoat systems
- Textile coatings
- Non-woven binders
- Microencapsulation

## PHYSICAL PROPERTIES

Property	Range	Method
Appearance	Clear Liquid	ASTM E284
Non-volatile by wt.	77-81%	DIN EN ISO 3251 (2hrs/75°C)
Viscosity, 25°C	600-1000 mPa·s	DIN EN ISO 3219
Free formaldehyde	≤ 0.4%	Sulfite Titration
Color, APHA	≤ 70	DIN EN ISO 6271

## TYPICAL PROPERTIES (NOT CONTINUALLY DETERMINED)

Property	Range	Method
Density, 25°C	10.3 – 10.5 lbs/gal	ASTM D1475-13

## SOLUBILITY

Alcohols	Partial
Esters	Insoluble
Ketones	Insoluble
Aromatic hydrocarbons	Insoluble
Aliphatic hydrocarbons	Insoluble
Water	Complete

## COMPATIBILITY

Water reducible polymers	Very good
Polymer dispersions	Very good
Emulsions	Very good

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## BACKBONE POLYMER SELECTION

CYMEL 385 resin contains a combination of methoxymethyl, methylol and imino functionalities, making it a very effective crosslinker for backbone polymer resins containing hydroxyl, amide and, to some extent, carboxyl functional groups, such as those found on alkyd, polyester or acrylic resins. Although the optimum level of CYMEL 385 resin should be determined experimentally, ratios of 20 to 30% based on resin solids are typically most effective.

## CATALYSIS

CYMEL 385 resin may not require the addition of an acid catalyst to the formulation to obtain effective cure. In many instances, the acidity of the backbone polymer in the formulation is sufficient to catalyze the reaction under normal baking conditions (15 minutes at 120-150°C). If catalyst addition is required, then 0.5-1.0% of CYCAT<sup>®</sup> 296-9 catalyst based on total resin solids is recommended.

## FORMULATION STABILITY

It is essential that a tertiary amine, such as dimethylethanolamine or triethylamine, be used for neutralization and pH adjustment. For optimum stability, a pH of 7.5-8.5 should be maintained.

## STORAGE STABILITY

CYMEL 385 resin has a shelf life of 180 days from the date of manufacture when stored at temperatures between 5°C and 32°C. Although low temperatures are not detrimental to stability, its viscosity will increase, possibly making the resin difficult to pump or pour. The viscosity will reduce again on warming, but care should be taken to avoid excessive local heat as this can cause an irreversible increase in viscosity. Beware of freezing.

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