

# CYMEL<sup>®</sup> 323 resin

## PRODUCT DESCRIPTION

CYMEL 323 resin is a methylated high imino melamine crosslinker supplied in iso-butanol. The exceptional high reactivity combined with very good hardness, appearance, and low formaldehyde release during cure makes CYMEL 323 resin suitable for low bake solvent-borne and water-borne formulations.

## BENEFITS

- Exceptional cure response
- Water soluble
- Low formaldehyde release

## APPLICATION AREAS

- Low temperature cure coatings
- General industrial coatings
- Mirror backing

## PHYSICAL PROPERTIES

Property	Range	Method
Appearance	Clear Liquid	Visual
Non-volatile by wt.	80 ± 2%	Foil, 45 min/45°C
Viscosity, 23°C	2500-7500 mPa-s	Dynamic Viscosity
Free formaldehyde	≤ 0.7 %	Sulfite Method
Color, APHA	< 70	ISO 6271

## SOLUBILITY

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

## COMPATIBILITY

Acrylic resins	Very good
Alkyd resins	Very good
Epoxy resins	Very good
Polyester resins	Very good

## BACKBONE POLYMER SELECTION

CYMEL 323 resin is an effective crosslinker for backbone polymer resins containing hydroxyl, carboxyl, and amide functional groups, such as those found on alkyd, polyester or acrylic resins. Although the optimum level of CYMEL 323 resin should be determined experimentally, ratios of 25 to 35% based on resin solids are typically most effective.

## CATALYSIS

CYMEL 323 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 (15-20 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

The stability of solvent-borne systems containing CYMEL 323 resin can be enhanced by the addition of primary alcohols, amines, or a combination of these. Low molecular weight primary alcohols such as ethanol and n-butanol are most effective. Recommended amines are TEA, DMEA or 2-AMP at a concentration of 0.5-1.0% on total binder solids. For best stability in waterborne systems, a pH between 7.5-8.5 should be maintained using tertiary amines only.

## STORAGE STABILITY

CYMEL 323 resin has a shelf life of 2 years from the date of manufacture when stored at temperatures between 5°C and 30°C. Although lower 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.