All About Resins

TECHNICAL DATA SHEET

Crosslinkers

CYMEL® 373 resin

PRODUCT DESCRIPTION

CYMEL 373 resin is a partially methylated melamine supplied in water. Its high reactivity combined with water solubility makes CYMEL 373 resin suitable for a wide range of fast-curing waterborne industrial coating formulations.

BENEFITS

- Fast cure in waterborne formulations
- Water soluble
- Good film appearance

APPLICATION AREAS

- Emulsions
- Waterborne industrial coatings

PHYSICAL PROPERTIES

Property	Range	Method
Appearance	Clear Liquid	Visual
Non-volatile, wt %	83.0 – 87.0	ISO 3251
Viscosity, 23°C mPa.s	2,500 - 7,000	ISO 3219
Free formaldehyde	≤ 2.1%	Sulfite
Color, APHA	< 70	ISO 6271

SOLUBILITY

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

COMPATIBILITY

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

BACKBONE POLYMER SELECTION

CYMEL 373 resin contains a combination of methoxymethyl and methylol 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 373 resin should be determined experimentally, ratios of 20 to 30% based on resin solids are typically most effective.

CATALYSIS

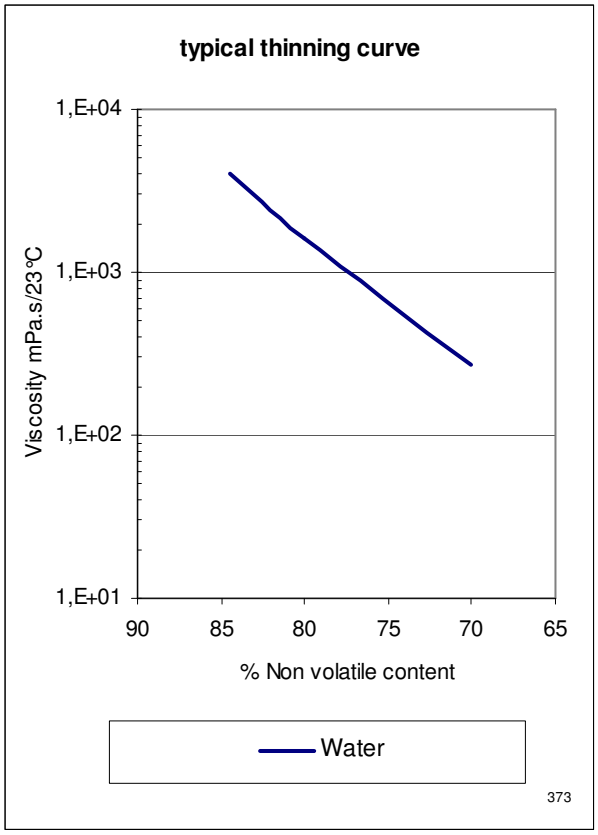
CYMEL 373 resin may not require the addition of an acid catalyst to the formulation to obtain effective cure. In many instances, the acidity of the backbone polymer in the formulation is sufficient to catalyze the reaction under normal baking conditions (15 minutes at 120-150°C). If catalyst addition is required, then 0.5-1.0% of CYCAT® 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 373 resin has a shelf life of 15 months 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. Beware of freezing.



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