

CYMEL® UI-20-E resin

PRODUCT DESCRIPTION

CYMEL UI-20-E resin is a partially iso-butylated urea crosslinker designed for use in acid curing wood coatings with high film build requirements. Being supplied in ethanol, films dry very quickly resulting in coatings with excellent early block resistance.

BENEFITS

- High film build
- Low odor
- Fast drying
- Excellent block resistance
- Low formaldehyde release

APPLICATION AREAS

- Acid curing wood coating applications

PHYSICAL PROPERTIES

| Property | Range | Method |
|---------------------|-----------------|-------------------|
| Appearance | Clear Liquid | Visual |
| Non-volatile by wt. | 78 ± 2% | Pan, 1 hr/100°C |
| Viscosity, 23°C | 1700-3500 mPa-s | Dynamic Viscosity |
| Free formaldehyde | ~0.5% | Sulfite Method |
| Color, APHA | < 50 | ISO 6271 |

SOLUBILITY

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

COMPATIBILITY

| | |
|----------------------------|--------|
| Acrylic resins | Medium |
| Alkyd resins | Good |
| Polyester resins | Good |
| Nitrocellulose | Good |
| Cellulose acetate butyrate | Good |
| Polyvinyl butyrate | Good |

BACKBONE POLYMER SELECTION

CYMEL UI-20-E resin is a very effective crosslinking agent for backbone polymer resins containing hydroxyl functional groups, such as alkyd, polyester or acrylic resins. CYMEL UI-20-E resin has high reactivity and a high tendency for self-condensation providing fast drying films with good gloss, hardness and block resistance. The optimum level of CYMEL UI-20-E resin in an acid curing wood coating formulation should be in the range of 25-35% on total resin solids. To obtain formulations with optimum resistance properties, addition of a melamine resin, such as CYMEL MB 98 resin, at levels of 5-10% on total resin solids is recommended.

CATALYSIS

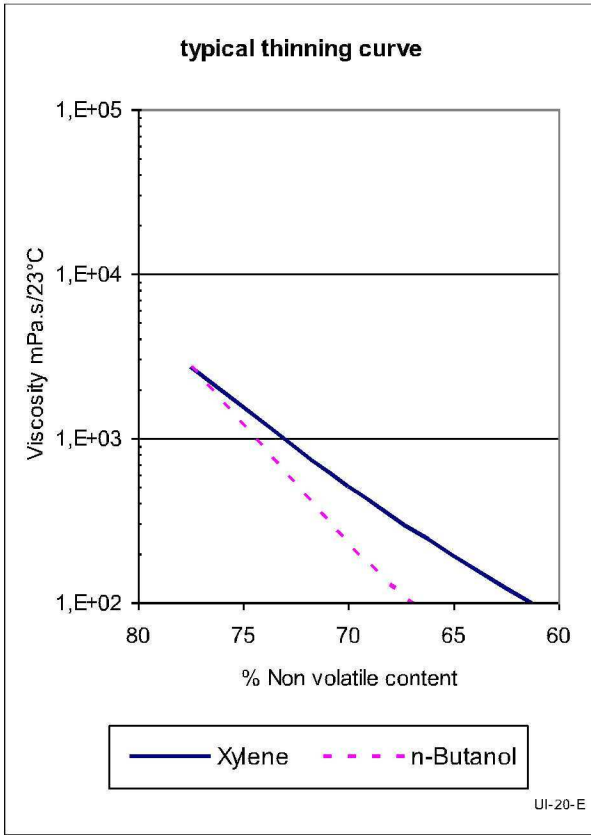
CYMEL UI-20-E resin responds best to sulfonic acid catalysts, like CYCAT® 4040. Generally, 6-10% CYCAT 4040 catalyst on total binder solids of the formulation is sufficient to obtain fast drying behavior at room temperature.

POT LIFE

To extend catalyzed pot life of the formulation, addition of primary alcohols, such as n-butanol, ethanol, and methanol, is required at concentrations of 10-25% on total resin solids. Faster evaporating alcohols will improve speed of dry.

STORAGE STABILITY

CYMEL UI-20-E resin has a shelf life of 24 months from date of manufacture when stored at temperatures between 5°C and 30°C. Although low temperatures are not detrimental to stability, the viscosity of the product will increase making the resin more difficult to pump or pour. Product viscosity can be returned to normal by gentle re-warming, however, care should be taken to avoid excessive localized heating as this can cause an irreversible increase in viscosity.



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