CYMEL® 1130

Technical Datasheet

be ECOWISE™

PRODUCT DESCRIPTION

CYMEL® 1130 resin is a methylated/n-butylated melamine crosslinker with a high extent of alkylation. Its hydrophobic nature makes for improved wetting and adhesion on metal substrates, and improved humidity and salt spray resistance. CYMEL® 1130 resin is insoluble in water but shows excellent compatibility and stability with water-soluble backbone polymers and is an excellent crosslinker for anodic electrodeposition coatings.

BENEFITS

- Good salt spray resistance
- High Solids
- Water Insoluble

APPLICATION AREAS

- Electrocoating finishes
- Automotive coatings
- High solids coatings

PHYSICAL PROPERTIES

Property	Range	Method
Appearance	Clear Liquid	ASTM E284
Non-volatile by wt.	96-100%	DIN 55671 (Foil, 45 min/45°C)
Viscosity, 23°C	3000 - 6000 mPa·s	DIN EN ISO 3219
Free formaldehyde	< 0.1%	Sulfite Titration
Color, APHA	≤ 70	DIN EN ISO 6271

SOLUBILITY

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

COMPATIBILITY

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

BACKBONE POLYMER SELECTION

CYMEL® 1130 resin contains a combination of methoxymethyl and n-butoxymethyl functional sites making it a highly effective crosslinker for backbone polymer resins containing hydroxyl, carboxyl, or amide functional groups, such as those found on alkyd, polyester, or acrylic resins. The effective equivalent weight of CYMEL® 1130 typically ranges from 150 - 225, however, its optimum loading should be determined experimentally for each formulation with consideration of the performance properties to be optimized.

CATALYSIS

Because of its high extent of alkylation, CYMEL® 1130 resin responds best to sulfonic acid catalysts, like CYCAT® 4040 catalyst or CYCAT® 600 catalyst. Generally, 0.5 to 1.0% of CYCAT® 4040 catalyst on total resin solids of the formulation is sufficient to provide good cure at normal baking schedules (15 - 20 minutes at 120 - 150°C) in solvent-borne systems. Water-borne systems generally require temperatures of 150°C or higher to effect cure. Higher concentrations of catalyst might be necessary if there are basic pigments or additives present in the formulation.

FORMULATION STABILITY

The stability of formulated systems containing CYMEL® 1130 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 DMEA or 2-AMP at a concentration of 0.5 - 1.0% on total resin solids. Package stability can also be enhanced by the use of a blocked acid catalyst such as CYCAT® 4045 catalyst. For waterborne systems, pH should be adjusted to 7.5 - 8.5 to achieve optimum stability.

STORAGE STABILITY

CYMEL® 1130 resin has a she life of 1800 days from the date of manufacture when stored at temperatures below 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.