

CYMEL[®] 1125 resin

PRODUCT DESCRIPTION

CYMEL 1125 resin is a highly methylated/ethylated, carboxyl-modified benzoguanamine crosslinker supplied in 2-butoxy ethanol. It is especially designed for electro-deposition primer formulations requiring excellent corrosion and detergent resistance. The structure of CYMEL 1125 resin offers superior adhesion to metal substrates. CYMEL 1125 resin can be used in a wide range of general purpose industrial finishes. However, because CYMEL 1125 resin contains chelating groups which can form coloured compounds with heavy metal ions such as iron and zinc, it is recommended for use in only dark single coat applications or primers, and not in pastel colors. Benzoguanamine resins have poor resistance to UV light, hence CYMEL 1125 is not suitable for exterior applications.

BENEFITS

- Salt spray resistance
- Adhesion properties
- Detergent resistance

APPLICATION AREAS

- Electro-deposition primers
- High solids primer formulations

PHYSICAL PROPERTIES

Property	Range	Method
Appearance	Clear Liquid	Visual
Non-volatile Content	89 ± 2%	Foil, 45 min/45°C
Viscosity, 23°C	5000-17000 mPa-s	Dynamic Viscosity
Free formaldehyde	≤ 0.2%	Sulfite Method
Color, Gardner	< 6	Gardner

SOLUBILITY

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

COMPATIBILITY

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

BACKBONE POLYMER SELECTION

CYMEL 1125 resin contains mainly methoxymethyl and ethoxymethyl functional sites making it a very effective crosslinker for backbone polymer resins containing hydroxyl, amide or carboxyl functional groups, such as those found on alkyd, polyester or acrylic resins. The effective equivalent weight of CYMEL 1125 resin typically ranges from 170-220, however, its optimum loading should be determined experimentally for each formulation with consideration of the performance properties to be optimized.

CATALYSIS

CYMEL 1125 resin responds best to sulfonic acid catalysts, like CYCAT[®] 4040 catalyst, CYCAT 600 catalyst, or CYCAT 500 catalyst. Generally 0.5 to 1.0% catalyst solution on total binder solids of the formulation is sufficient to provide good cure at baking schedules of 20 minutes at 120°C to 160°C. Higher concentrations might be necessary if there are basic pigments or additives present in the formulation.

FORMULATION STABILITY

The stability of formulated systems containing CYMEL 1125 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 between 7.5-8.5 to achieve optimum stability.

STORAGE STABILITY

CYMEL 1125 resin has a shelf life of 3 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.

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