All About Resins

TECHNICAL DATA SHEET

Crosslinkers

CYMEL® 27-802 resin

PRODUCT DESCRIPTION

CYMEL 27-802 resin is a general purpose partially n-butylated melamine resin supplied in a mixture of n-butanol and xylene . CYMEL 27-802 combines fast curing speed with good resistance properties making it suitable for a wide variety of industrial bake finishes including decorative metal coatings.

BENEFITS

- Fast curing speed
- Provides films with good resistance properties
- Provides films with high gloss and film hardness

APPLICATION AREAS

- General industrial bake finishes
- Metal decorating formulations

PHYSICAL PROPERTIES

Property	Range	Method
Appearance	Clear Liquid	Visual
Non-volatile by wt.	58.0 – 62.0%	Pan, 90'/105°C
Viscosity, 25°	P-T	Gardner-Holdt
Free formaldehyde	2%	Sulfite Method
Color, Gardner	≤ 1.0	ASTM D1544-04
Density, 25°C	1.014-1.038 g/cm^3	

SOLUBILITY

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

COMPATIBILITY

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

BACKBONE POLYMER SELECTION

CYMEL 27-802 resin is a very effective crosslinking agent for backbone polymer resins containing hydroxyl, amide, and carboxyl functional groups, such as found on alkyd, polyester or acrylic resins. In addition to crosslinking, CYMEL 27-802 resin has a high tendency for self-condensation providing films with very good flow, gloss, hardness, adhesion, exterior durability and chemical resistance properties. Although the optimum level of CYMEL 27-802 resin in a given formulation should be determined experimentally, ratios between 25% and 35% based on resin solids are typically most effective.

CATALYSIS

CYMEL 27-802 resin does not require the addition of an acid catalyst to the formulation to obtain effective cure at normal baking conditions. The acidity of the primary film former is usually sufficient to initiate the curing process. The cure can be additionally catalyzed by weak organic or inorganic acids, such as CYCAT® 296-9 catalyst, which has proved to be very effective for these systems. Recommended levels are 1.0-2.0% on total resin solids for baking schedules of 110°C-150°C for 15 to 20 minutes.

FORMULATION STABILITY

The stability of formulations containing CYMEL 27-802 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.

STORAGE STABILITY

CYMEL 27-802 resin has a shelf life of 12 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.

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