

PRODUCT DESCRIPTION

CYMEL® 1158 resin is an n-butylated, high imino melamine crosslinker which combines the excellent compatibility of a conventional butylated melamine resin with the fast, low temperature cure response of CYMEL® 325 resin. Like other high imino melamine resins, CYMEL® 1158 has a high tendency to self-condense resulting in films with high film hardness that can be adjusted based on loading. Its hydrophobic nature improves substrate wetting, flow and leveling, and humidity and salt spray resistance making it suitable for a wide range of applications including automotive topcoats and general industrial finishes.

BENEFITS

- Fast cure response
- Substrate wetting
- Low formaldehyde release upon cure
- Humidity and salt spray resistance

APPLICATION AREAS

- Automotive coating formulations
- General industrial coatings

PHYSICAL PROPERTIES

Property	Range	Method
Appearance	Clear Liquid	ASTM E284
Non-volatile by wt.	78-82%	DIN 55671 (Foil, 45 min/45°C)
Viscosity, 23°C	4000 – 7000 mPa·s	DIN EN ISO 3219
Free formaldehyde	≤ 1.2%	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
Polyester resins	Very good
Epoxy resins	Very good

BACKBONE POLYMER SELECTION

CYMEL® 1158 resin is an effective crosslinker for backbone polymer resins containing hydroxyl, carboxyl, and amide functional groups, such as those found on alkyd, polyester or acrylic resins. Although the optimum level of CYMEL® 1158 resin should be determined experimentally, ratios of 25 to 35% based on resin solids are typically most effective.

CATALYSIS

CYMEL® 1158 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 - 20 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

The stability of solvent-borne systems containing CYMEL® 1158 resin can be enhanced by the addition of primary alcohols, amines, or a combination of these. Low molecular weight primary alcohols such as ethanol or n-butanol are most effective. Recommended amines are TEA or DMEA at a concentration of 0.5 - 1.0% on total binder solids.

STORAGE STABILITY

CYMEL® 1158 resin has a shelf life of 720 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.