CYMEL® 235

Technical Datasheet

PRODUCT DESCRIPTION

CYMEL® 235 resin is a highly alkylated methox-butoxy methylolated melamineformaldehyde resin.
For electro deposition coatings, both glossy finish and matt finish film can be achieved. CYMEL® 235 resin is especially recommended for general metal finishes providing flexibility.

BENEFITS

- Good Salt-Spray Resistance
- Low Free Formaldehyde
- Good flexibility properties

APPLICATION AREAS

- Automotive Top Coat
- AED Coating
- General Metal Finishes

PHYSICAL PROPERTIES

Property	Range	Method
Appearance	Clear Liquid	Visual
Non-volatile by wt.	min. 97%	Pan, 180 min/105°C
Viscosity, 25°C	S – X	Gardner Holdtz Method
Free formaldehyde	≤ 0.5%	Sulfite Method
Color, Gardner	≤ 1	ISO 4630-2

SOLUBILITY

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

COMPATIBILITY

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

BACKBONE POLYMER SELECTION

CYMEL® 235 resin is a versatile crosslinking agent for a wide range of polymeric materials containing carboxyl, hydroxyl or amide functionalities such as acrylic, alkyd, polyester and epoxy resins.

CATALYSIS

The cross-linking reaction follows the reaction pathway for specific acid catalysis and requires an acid catalyst with pKa value of <1. Strong acids, which include the mineral acids and the organic sulfonic acids such as CYCAT® 4040 catalyst, CYCAT® 600 and CYCAT® 500 catalyst, are the most widely used catalysts for systems using CYMEL® 235 resin.

FORMULATION STABILITY

Finishes using CYMEL® 235 resin as the cross-linking agent can be stabilized very effectively with amines as well as alcohols. In many high-solids formulations it is not practical to incorporate a sufficiently high level of alcohol to maintain adequate enamel stability. Good stability has been obtained in high solids systems by using 25% of the added solvent as primary alcohol such as n-butanol and blocking the acid catalyst with 110% of the stoichiometric equivalent of an amine such as di-isopropanol amine.

STORAGE STABILITY

CYMEL® 235 resin has a shelf life of 540 days from the date of manufacture when stored at temperatures between 5°C and 30°C packed in unopened original containers. CYMEL® 235 resin must be kept indoors and avoided the direct sunlight exposure.
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.