

PRODUCT DESCRIPTION

CYMEL® UB-24-BX resin is a partially n-butylated urea crosslinker supplied in a mixture of n-butanol and xylene. Its fast reaction speed and film hardness development combined with excellent adhesion properties makes CYMEL® UB-24-BX resin suitable for industrial primer formulations where electrostatic spray application is required.

BENEFITS

- Very fast reaction speed
- Good adhesion properties
- Very high electrostatic resistivity

APPLICATION AREAS

- General industrial baking formulations
- Primer formulations
- Electrostatic spray application

PHYSICAL PROPERTIES

Property	Range	Method
Appearance	Clear Liquid	Visual
Non-volatile by wt.	63 ± 2%	Pan, 1 hr/100°C
Viscosity, 23°C	1700 – 2600 mPa.s	Dynamic Viscosity
Free formaldehyde	~ 0.4%	Sulfite Method
Color, APHA	< 50	ISO 6271

SOLUBILITY

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

COMPATIBILITY

Acrylic resins	Medium
Alkyd resins	Very good
Polyester resins	Good
Nitrocellulose	Good
Cellulose acetate butyrate	Good
Polyvinyl butyrate	Good

BACKBONE POLYMER SELECTION

CYMEL® UB-24-BX resin is a very effective crosslinking agent 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® U-24-BX resin in a given formulation should be determined experimentally, ratios of 25 - 35%, based on resin solids, are typically most effective over a range of polymer backbone resins.

CATALYSIS

In baking enamels, CYMEL® UB-24-BX resin may not need 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® 4040 catalyst or CYCAT® 296-9 catalyst based on total resin solids is recommended.

FORMULATION STABILITY

The stability of baking enamels containing CYMEL® U-24-BX resin can be enhanced by the addition of alcohols, amines or combination of these. Low molecular weight primary alcohols, such as 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. Ambient cure systems are usually stabilized only by addition of adequate amounts of primary alcohol, such as ethanol or butanol.

STORAGE STABILITY

CYMEL® U-24-BX resin has a shelf life of 24 months from 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.