EBECRYL® 4250

Isocyanate Functional Urethane Acrylate

INTRODUCTION

EBECRYL 4250 is an undiluted isocyanate functional urethane acrylate designed for use as an adhesion promoter in UV/EB coatings and in two component dual cure systems for coatings on wood, plastic and metal.

SUGGESTED APPLICATIONS

Formulations with EBECRYL 4250 can be used for;

- Adhesion promotion in UV/EB curing coatings
- UV/EB curable, two component polyurethane coatings
- One component adhesion primer

EBECRYL 4250 can be combined with hydroxyl functional resins to formulate coatings which cure by dual processes; UV/EB induced polymerization and NCO/OH reaction.

The product is also used in pure UV curing coatings to improve the adhesion on critical substrates as plastic, metal and exotic woods.

EBECRYL 4250 is suitable for the formulation of moisture-curing one-component polyurethane coatings, especially for one-component adhesion primers.

FORMULATING

The viscosity of EBECRYL 4250 can be reduced using standard reactive diluents such as dipropylene glycol diacrylate (DPGDA)(1), 1,6-hexanediol diacrylate (HDDA)(1), isobornyl acrylate (IBOA)(1), and trimethylolpropane triacrylate (TMPTA)(1) Suitable solvents are esters, ketones and aromatic hydrocarbons.

Reactive diluents and solvents containing reactive groups such as hydroxyl or amine groups strongly influence pot life and thus storage stability.

Coatings containing EBECRYL 4250 are applied by spray, curtain or roller coating at ≤ 100g/m² coat weight. After an adequate flash-off time of solvents (if any), the coatings are UV/EB cured. This creates a tack free and dust-dry surface. Following UV/EB curing, the post-reaction of NCO/OH groups takes place at room temperature or is forced. This results in good adhesion and good mechanical and chemical resistance of the coating.

EBECRYL 4250 has good compatibility with esters, ketones and aromatic hydrocarbons such as ethyl acetate, butyl acetate, methoxypropyl acetate, acetone, methyl ethyl ketone, methyl isobutyl ketone, xylene and mixtures thereof.

Only pure grade solvents should be used (max 0.05% water). EBECRYL 4250 should not be thinned below a non-volatile content of 40%. Prolonged storage of a solution with lower binder content may result in turbidity, sedimentation or even gelling.

Because of the many possible combinations with thinners and solvents, the compatibility and storage stability must be tested in each individual case.

TYPICAL PHYSICAL PROPERTIES	VALUE
Color, Pt-Co scale(2)	<100
Density, g/ml at 20°C	1.10
Flash point, °C	>100
Functionality, acrylate groups	3.4
Functionality, NCO groups	1.4
NCO content, %	5
Viscosity, 23°C, cP/mPa·s	2000

STORAGE AND HANDLING

Before using EBECRYL 4250, consult the Safety Data Sheet for additional information on safety and handling procedures, and recommended personal protective equipment.

The recommended storage temperature range for EBECRYL 4250 is 4°C to 40°C (39°F to 104°F). Care should be taken not to expose the product to high temperature conditions, direct sunlight, ignition sources, oxidizing agents, alkalis, acids or water. Prevent inadvertent contact with peroxides and other radical initiators and contact with copper, copper alloys, carbon steel, iron and rust. This might cause uncontrollable polymerization of the product with the generation of heat. Storage and handling should be in stainless steel, amber glass, amber polyethylene or baked phenolic lined containers. Procedures that remove or displace oxygen from the material should be avoided. Do not store this material under an oxygen free atmosphere. The product is sensitive to moisture. Skin formation may occur in opened containers. Dry air is recommended to displace material removed from the container.

PRECAUTIONS

Avoid contact with eyes and skin. Direct contact with this material may cause skin irritation and serious eye irritation. Repeated skin contact may result in sensitization and cause an allergic skin reaction. Wash thoroughly after handling. Keep container tightly closed. Use with adequate ventilation.

(1) Product of Allnex
(2) Also referred to as APHA/Hazen color