

# EBECRYL® 4765

## Isocyanate Functional Aliphatic Urethane Acrylate

### INTRODUCTION

EBECRYL 4765 is an isocyanate functional aliphatic urethane acrylate supplied in ethyl acetate and designed for use in UV/EB coatings and in two component dual cure systems for coatings on wood, plastic and metal.

### SUGGESTED APPLICATIONS

EBECRYL 4765 can be used for;

- UV/EB curable, two component polyurethane coatings
- Adhesion promotion in UV/EB curable coatings

EBECRYL 4765 can be combined with hydroxyl-bearing resins to formulate coatings which cure by dual-cure process; UV/EB induced polymerization and NCO/OH reaction.

The product can also be used in straight UV/EB curing coatings to improve the adhesion on substrates such as plastic, metal and exotic woods. Compared with EBECRYL 4396, EBECRYL 4765 will result in better chemical resistance.

### FORMULATING

EBECRYL 4765 can be combined with (meth)acrylate resins, standard reactive diluents such as dipropylene glycol diacrylate (DPGDA)<sup>(1)</sup>, 1,6-hexanediol diacrylate (HDDA)<sup>(1)</sup>, isobornyl acrylate (IBOA)<sup>(1)</sup>, and trimethylolpropane triacrylate (TMPTA)<sup>(1)</sup> and non-reactive solvents. Suitable solvents are esters, ketones and aromatic hydrocarbons. Only pure grade solvents should be used (max 0.05% water). The non-reactive solvent in EBECRYL 4765 must be evaporated prior to curing.

Radical polymerization can be effected by UV or electron beam radiation or the incorporation of thermal radical initiators such as peroxides and accelerators. The addition of radical photoinitiators is necessary for the UV curing of coating containing EBECRYL 4765. The specific photoinitiators and amount is dependent on the performance requirements. EB curing requires thorough inerting (risk of surface inhibition). Following UV/EB curing, any post-reaction of NCO/OH groups takes place at room temperature or is forced by heat. This results in good adhesion and good mechanical and chemical resistance of the coating.

Formulations containing EBECRYL 4765 can be applied by spray, curtain or roll coating, or printing. Such coatings can be applied to a wide variety of substrates, e.g. wood, engineered wood, paper, plastics, cork and mineral and cement substrates.

Coatings with EBECRYL 4765 containing common inorganic additives and fillers should be monitored for the formation of sedimentation which can result in premature gelling of the coating. Reactive diluents and solvents containing reactive groups such as hydroxyl or amine groups strongly influence pot life and storage stability. Because of the large number of possible combinations, compatibility should be tested in each case.

### TYPICAL PHYSICAL PROPERTIES

	VALUE
Colour, Pt-Co scale <sup>(2)</sup>	<100
Density, g/ml at 20°C	1.05
NCO content, %	4.0-5.0
Non-volatile matter	53.0-57.0
Viscosity, 23°C, cP/mPa·s	50-300

### STORAGE AND HANDLING

Before using EBECRYL 4765, 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 4765 is 4°C to 40°C (39°F to 104°F). EBECRYL 4765 is highly flammable. Keep open containers away from heat, sparks, open flames and hot surfaces. Care should be taken not to expose the product to high temperature conditions, direct sunlight, 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 slight skin 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 colour

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