

EBECRYL® 4500

Aromatic Urethane Acrylate

INTRODUCTION

EBECRYL 4500 is an undiluted aromatic urethane acrylate designed for wood coatings (cork and parquet) with a high grit feeder abrasion resistance.

PERFORMANCE HIGHLIGHTS

UV/EB cured coatings based on EBECRYL 4500 are characterized by the following performance properties:

- High flexibility
- Good coin scratch resistance
- High abrasion resistance, in particular according to the grit feeder method

The actual properties of UV/EB energy cured products also depend on the selection of other formulation components such as reactive diluents, additives and photoinitiators.

SUGGESTED APPLICATIONS

EBECRYL 4500 is used in formulation of UV/EB energy curable coatings for application by roller coating, spraying and curtain coating on wood, cork, furniture, paper, parquet and film. Coatings with EBECRYL 4500 should be expected to yellow upon aging.

FORMULATING

Depending on the application, the coating can be adjusted to application viscosity 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⁾ or solvents such as butyl acetate.

Also, EBECRYL 4265 is particularly suitable for reducing the viscosity of EBECRYL 4500. The advantage of the use of EBECRYL 4265 for viscosity thinning is that the reduction in reactivity is lower than by using conventional reactive diluents.

Because of the many potential combinations with reactive diluents and solvents compatibility must be tested in each individual case.

UV curing of coatings formulated with EBECRYL 4500 requires the addition of standard commercial photoinitiators. Typical levels are 4-6%, though this may vary to meet the reactivity requirements of the application. In the case of EB curing, a low oxygen atmosphere must be ensured to avoid surface inhibition.

Lower gloss coatings can be produced using standard matting agents. Care should be taken with respect to sedimentation which may cause the coating to gel prematurely.

(1) Product of Allnex

(2) Also referred to as APHA/Hazen colour

SPECIFICATIONS

	VALUE
Acid number, mg KOH/g, max.	2
Colour, Pt-Co scale ⁽¹⁾ , max.	300
Viscosity, 23°C, cP/mPa·s	5000-7000

TYPICAL PHYSICAL PROPERTIES

Density, g/ml at 20°C	1.15
Flash point, °C	>100
Functionality	3.9
Hydroxyl content, %	0.3

TYPICAL CURED PROPERTIES

Tensile strength, psi (MPa)	870 (6.0)
Elongation at break, %	15
Tg, °C	9

STORAGE AND HANDLING

Before using EBECRYL 4500, 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 4500 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 or acids. 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. 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 serious eye and slight skin irritation. Wash thoroughly after handling. Keep container tightly closed. Use with adequate ventilation.

• Worldwide Contact Info: www.allnex.com •

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