EBECRYL® 4766

Technical Datasheet

POLYESTER METHACRYLATE

INTRODUCTION

EBECRYL® 4766 is an undiluted polyester methacrylate containing hydroxyl groups and is designed for UV/EB energy curing and dual-cure coatings.

SUGGESTED APPLICATIONS

EBECRYL® 4766 can be combined with isocyanate functional urethane acrylate resins for the formulation of coatings cured by a dual-cure process (UV induced polymerization and NCO/OH reaction). Suitable isocyanate functional urethane acrylate resins include EBECRYL® 4141, 4510 and 4765.
Coatings formulated with EBECRYL® 4766 are applied by spraying, curtain coating or roller coating (≤ 100 g/m²) and cured after an adequate flash-off time, if required.
Dual-cure processes include:

- NCO/OH reaction followed by UV curing. The NCO/OH reaction can provide a non-blocking coating suitable for thermo or vacuum forming processes. UV curing of the formed coating increases its durability and chemical resistance.
- UV curing to provide a hard coating surface, with subsequent NCO/OH reaction which provides through curing, particularly in pigmented systems and shadowed areas.

The reaction of the isocyanate groups can be accelerated with standard two-component polyurethane catalysts. Photo initiators are required for UV curing, with typical photo initiators being suitable. The type and amount of catalysts and/or photo initiators should be adjusted to the plant and process condition.
Pot-life of two component-systems should be tested in accordance with the planned application.

TYPICAL PHYSICAL PROPERTIES

Acid value, mg KOH/g	~30
Density, g/cm³	1.17
Flash point °C	> 100

SPECIFICATIONS

Color, Apha	max. 400
Hydroxyl content calculated, %	4.8 – 6.1
Viscosity, 23°C, mPa.s	2000 – 5000
Water Content, %	max. 0.10

COMPATIBILITY/SOLUBILITY

EBECRYL® 4766 can be thinned with standard reactive diluents (mono-, di-, tri- or tetra-acrylate esters) as well as with solvents. Reactive diluents and solvent containing reactive groups such as hydroxyl or amino groups strongly influence pot-life and thus storage stability.
Suitable solvents are esters, ketones and aromatic hydrocarbons such as ethyl acetate, butyl acetate, methoxypropyl acetate, acetone, methyl ethyl ketone, methyl isobutyl ketone, xylene and mixtures thereof. Compatibility with the listed solvents is generally good, but the storage stability of the respective solutions should be tested. Only PU grade solvent should be used (≤ 0.05% water).

STORAGE AND HANDLING

Before using EBECRYL® 4766, consult the Safety Data Sheet for additional information on safety and handling procedures, and recommended personal protective equipment.
EBECRYL® 4766 should be stored in a cool, dry location. 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.

PRECAUTION

Avoid contact with eyes and skin. Wash thoroughly after handling. Keep container tightly closed. Use with adequate ventilation.