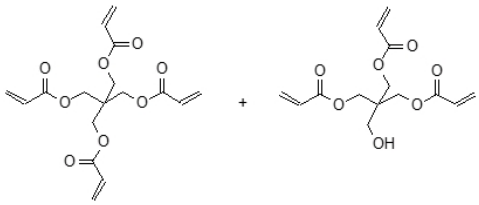
EBECRYL® 180

Technical Datasheet

PENTAERYTHRITOL ACRYLATE



Tetra- to tri- acrylate ester ratio ~ 2/1

INTRODUCTION

EBECRYL® 180 is a multifunctional reactive diluent with a high degree of acrylic unsaturation and finds use in a variety of ultraviolet light (UV) and electron beam (EB) curable coatings and ink systems where a high degree of crosslinking is desired. EBECRYL® 180 is a mixture of predominantly the tri- and tetra-acrylate esters of pentaerythritol. EBECRYL® 180 has a higher ratio of tetra- to tri-acrylate ester than the similar product PETIA, and therefore typically crystallizes at normal ambient temperatures.

PERFORMANCE HIGHLIGHTS

EBECRYL® 180 is characterized by:

- High acrylate functionality
- Residual hydroxyl content
- Very low vapor pressure

UV/EB curable formulated products containing EBECRYL® 180 are characterized by:

- Rapid photo response
- High cross-link density
- Excellent hardness and scratch resistance
- Excellent chemical resistance

The actual properties of UV/EB cured products also depend on the selection of other formulation components such as oligomers, additives and photo initiators.

SUGGESTED APPLICATIONS

EBECRYL® 180 is an especially useful reactive diluent in UV/EB cured coatings and inks where fast cure speed, hardness, scratch resistance and high gloss properties are required.

SPECIFICATIONS

Acid value, mg KOH/g	max. 1.0
Appearance	Clear liquid
Color, Apha	max. 100
Viscosity, 25°C, mPa.s	400 - 1000
Water content, %	max. 0.1

TYPICAL PHYSICAL PROPERTIES

Density, g/ml at 25°C	1.18
Flash point, Setaflash, °C	> 100
Formula weight	triacrylate: 298
	tetraacrylate: 352
Vapor pressure, mm Hg	at 25°C: < 0.001
	at 100°C: < 0.01
Inhibitor (MeHQ) content, ppm	400
Melting point, °C	25 - 40
Residual solvent, wt. %	< 0.1

PRECAUTIONS

Before using EBECRYL® 180, see the Safety Data Sheet (SDS) for information on the identified hazards of the material and the recommended personal protective equipment and procedures.

STORAGE AND HANDLING

Care should be taken not to expose the product to high temperature conditions, direct sunlight, ignition sources, oxidizing agents, alkalis or acids. 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. Wash thoroughly after handling. Keep container tightly closed. Use with adequate ventilation.

Upon storage, PETIA may become crystalline. This crystallization can be removed by heating containers of PETIA to a uniform temperature of 50°C. Ovens or hotboxes are recommended methods of heating. Heating tapes should not be used.

See the SDS for the recommended storage temperature range for EBECRYL® 180.