

AROMATIC URETHANE ACRYLATE

INTRODUCTION

EBECRYL® 6603 is an aromatic urethane acrylate diluted 20% by weight with the reactive diluent isobornyl acrylate (IBOA). Films of EBECRYL® 6603 cured by ultraviolet light (UV) or an electron beam (EB) feature good toughness, flexibility and abrasion resistance. EBECRYL® 6603 is useful as a modifier for harder resins such as epoxy acrylates.

PERFORMANCE HIGHLIGHTS

EBECRYL® 6603 is characterized by:

- Light color

UV/EB cured products containing EBECRYL® 6603 are characterized by the following performance properties:

- Good flexibility
- Good abrasion resistance

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

SUGGESTED APPLICATIONS

Formulated UV/EB curable products containing EBECRYL® 6603 may be applied via direct or reverse roll, offset gravure, metering rod, slot die, knife over roll, air knife, curtain, immersion and spin coating methods, as well as offset and screen printing. EBECRYL® 6603 is recommended for use in:

- Screen ink vehicles
- Laminating adhesives
- Coatings for rigid and flexible plastics
- Metal decorating inks and coatings

VISCOSITY REDUCTION

The viscosity of EBECRYL® 6603 can be reduced with the addition of reactive diluents such as 1,6-hexanediol diacrylate (HDDA)⁽¹⁾, isobornyl acrylate (IBOA)⁽¹⁾, trimethylolpropane triacrylate (TMPTA)⁽¹⁾, and tripropylene glycol diacrylate (TPGDA)⁽¹⁾. Although viscosity reduction can be achieved with non-reactive solvents, reactive diluents are preferred because they are essentially 100 percent converted during UV/EB exposure to form a part of the coating or ink, thus reducing solvent emissions. The specific reactive diluents used will influence performance properties such as hardness and flexibility.

⁽¹⁾ product of allnex

SPECIFICATIONS

Appearance	Clear liquid
Color, Gardner	max. 1
Viscosity at 60°C, mPa.s	9000 - 19000

TYPICAL PHYSICAL PROPERTIES

Density, g/cm ³ at 25°C	1.07
Functionality, theoretical	1.4
Oligomer, % by weight	80
Viscosity at 25°C, mPa.s	~188000

TYPICAL CURED PROPERTIES

Tensile strength, psi (MPa)	872 (6.0)
Elongation at break, %	129
Young's modulus, psi (MPa)	1623 (11.2)

PRECAUTIONS

Before using EBECRYL® 6603, 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.

See the SDS for the recommended storage temperature range for EBECRYL® 6603.