TECHNICAL DATASHEET

EBECRYL® 8702

Aliphatic Urethane Hexaacrylate

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EBECRYL® UV/EB Energy Curable Resins

allnex The Coating Resins Company

INTRODUCTION

EBECRYL 8702 is an aliphatic urethane hexaacrylate that offers a multitude of performance properties allowing the formulator the flexibility to meet requirements. Films using EBECRYL 8702 cured by ultraviolet light (UV) or electron beam (EB) exhibit a combination of hardness, abrasion and impact resistance coupled with good exterior durability.

PERFORMANCE HIGHLIGHTS

EBECRYL 8702 is characterized by:

- Light color
- Low odor
- Fast cure response
- Good pigment wetting

UV/EB cured products containing EBECRYL 8702 are characterized by the following performance properties:

- Good toughness
- Excellent abrasion and stain resistance
- Impact resistance
- Non-yellowing
- Good exterior durability

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

SUGGESTED APPLICATIONS

Formulated UV/EB curable products containing EBECRYL 8702 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 screen printing. EBECRYL 8702 is recommended for use in:

- Automotive OEM or Refinish
- Coatings for wood
- Plastic coatings
- Screen inks
- Light stable coatings
- Metal coatings

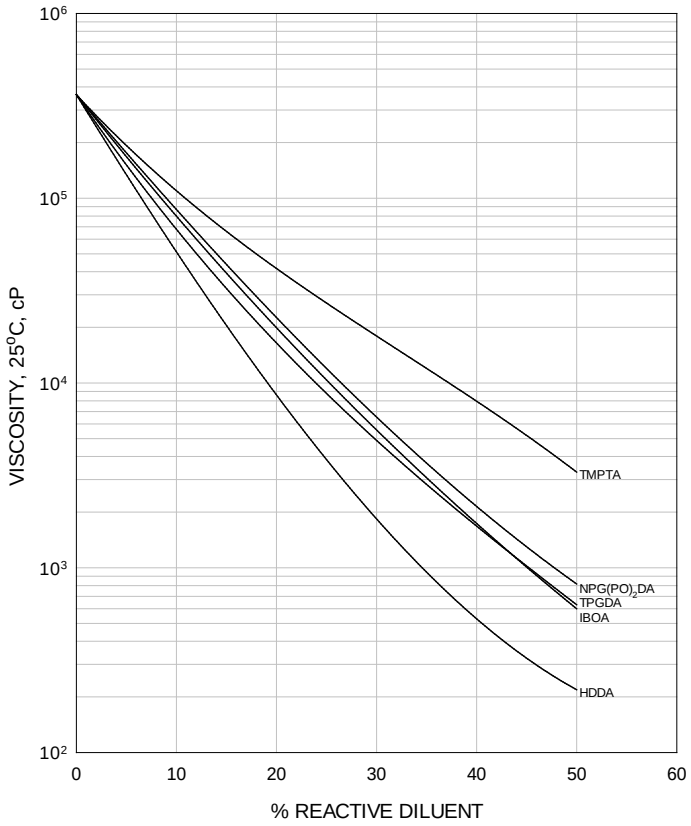
SPECIFICATIONS	VALUE
Appearance	Clear liquid
Color, Gardner scale, max.	1.0
NCO, %, max.	0.20
Viscosity, 60°C, cP/mPa·s	4800-6800

TYPICAL PHYSICAL PROPERTIES	VALUE
Density, g/ml at 25°C	1.13
Functionality, theoretical(1)	6
Oligomer, % by weight	100

TYPICAL CURED PROPERTIES(2)	
Tensile strength, psi (MPa)	4700 (32)
Elongation at break, %	10
Young's modulus, psi (MPa)	180000 (1241)
Glass transition temperature, °C(3)	28

GRAPH I

EBECRYL 8702 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



(1) Theoretical determination based on the undiluted oligomer.
(2) UV cured 125 µ thick films.
(3) Determined by Dynamic Mechanical Analysis.

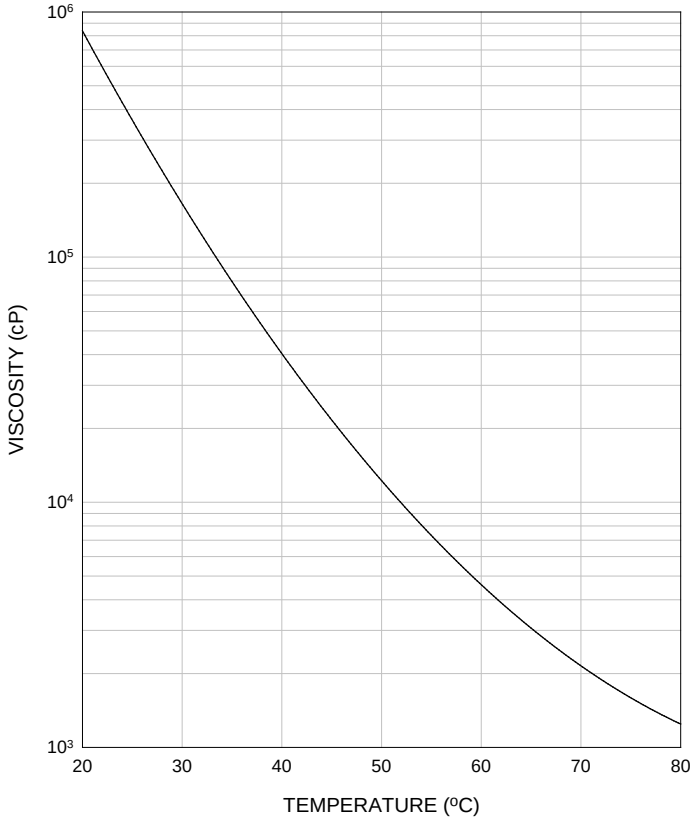
VISCOSITY REDUCTION

Graph I shows the viscosity reduction of EBECRYL 8702 with 1,6-hexanediol diacrylate (HDDA)[(1)], isobornyl acrylate (IBOA)[(1)], neopentyl glycol propoxylate diacrylate ($NPG(PO)_2DA$[(1)] trimethylolpropane triacrylate (TMPTA)[(1)], and tripropylene glycol diacrylate (TPGDA). 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.

Graph II illustrates the change in viscosity of EBECRYL 8702 with increasing temperature.

GRAPH II

EBECRYL 8702 - VISCOSITY VS. TEMPERATURE



PRECAUTIONS

Before using EBECRYL 8702, 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 8702.

Please refer to the allnex Guide to Safety and Handling of Acrylate Oligomers and Monomers for additional information on the safe handling of acrylates.

(1) Product of allnex

www.allnex.com