

BISPHENOL A EPOXY DIACRYLATE

INTRODUCTION

EBECRYL® 600 is the diacrylate ester of a bisphenol A epoxy resin. It exhibits light color and fast cure response. Films of EBECRYL® 600 cured via exposure to ultraviolet light (UV) or electron beam (EB) possess high surface hardness and gloss, and excellent chemical resistance. EBECRYL 600 finds broad use in UV/EB applications, including coatings, inks, and overprint varnishes.

PERFORMANCE HIGHLIGHTS

EBECRYL® 600 is characterized by:

- Light color
- Fast cure response

UV/EB cured properties based on EBECRYL® 600 are characterized by the following performance properties:

- High surface hardness
- High gloss
- Excellent chemical 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® 600 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® 600 is recommended for use in:

- Overprint varnishes
- Lithographic and screen inks
- Coatings for paper, paperboard, wood, chipboard and rigid plastics
- Paper upgrading
- Fast cure coatings
- Laminating adhesives
- Wood sealers

SPECIFICATIONS

Acid value, mg KOH/g	max. 2
Appearance	Clear liquid
Color, Gardner	max. 1
Epoxy content, %	max. 0.5
Viscosity, 60°C, mPa.s	2000 - 4000

TYPICAL PHYSICAL PROPERTIES

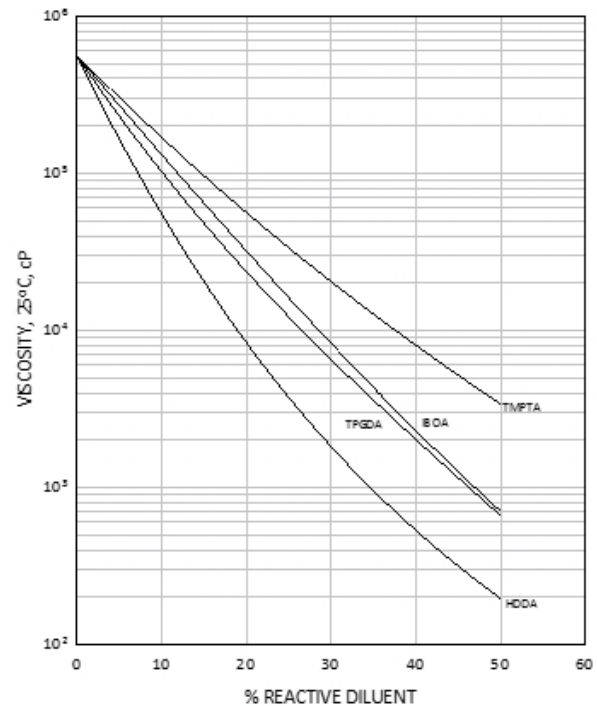
Density, g/cm ³ at 25°C	1.17
Functionality, theoretical	2
Oligomer, % by weight	100

TYPICAL CURED PROPERTIES

Tensile strength, psi (MPa)	10000 (67)
Elongation at break, %	4
Glass transition temperature, °C	130

GRAPH I

EBECRYL® 600 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



VISCOSITY REDUCTION

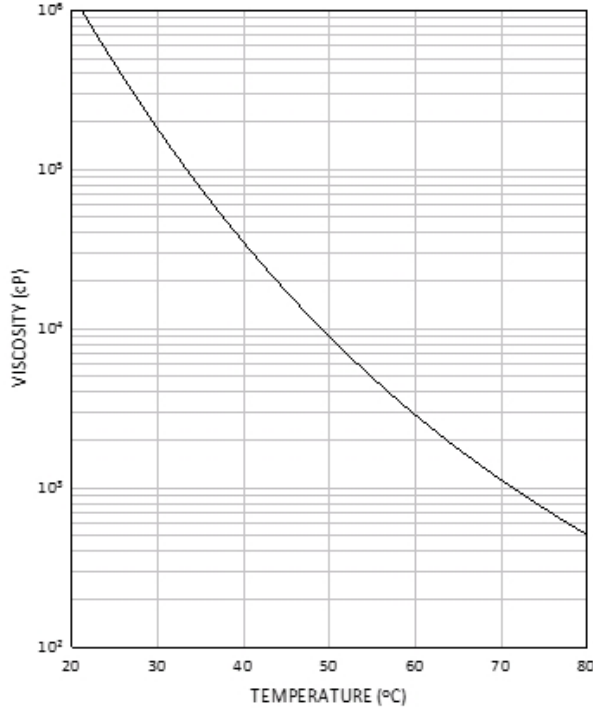
Graph I shows the viscosity reduction of EBECRYL® 600 with 1,6-hexanediol diacrylate (HDDA)⁽¹⁾, isobornyl acrylate (IBOA)⁽¹⁾, trimethylolpropane triacrylate (TMPTA)⁽¹⁾ and tripropylene glycol diacrylate (TPGDA)⁽¹⁾. Although viscosity reduction can be achieved with non-reactive solvents, reactive diluents 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

Graph II illustrates the change in viscosity of EBECRYL® 600 with increasing temperature.

GRAPH II

EBECRYL® 600 - VISCOSITY VS. TEMPERATURE



PRECAUTIONS

Before using EBECRYL® 600, 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® 600.