TECHNICAL DATASHEET

EBECRYL® 3500

Modified Bisphenol A Epoxy Diacrylate

March 2017

EBECRYL® UV/EB Energy Curable Resins

INTRODUCTION

EBECRYL 3500 is a modified bisphenol A epoxy diacrylate that exhibits relatively low viscosity, outstanding performance in many wood coating applications, and adhesion to many plastics. Films of EBECRYL 3500 cured by ultraviolet light (UV) or electron beam (EB) demonstrate good flexibility, high gloss, toughness, adhesion and superior chemical resistance.

PERFORMANCE HIGHLIGHTS

EBECRYL 3500 is characterized by:

- Relatively low viscosity
- Good UV/EB cure response

UV/EB cured products based on EBECRYL 3500 are characterized by the following performance properties:

- Good flexibility
- High gloss
- Toughness
- Good chemical resistance
- Excellent adhesion to most types of wood and many plastics

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 3500 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 lithographic and screen printing. EBECRYL 3500 is recommended for use in:

- Wood topcoats and sealers
- Clear coatings for paper, and flexible and rigid plastics
- Metal decorating varnishes
- Adhesives for paper or film lamination
- Lithographic and screen ink vehicles

SPECIFICATIONS

SPECIFICATIONS	VALUE
Acid value, mg KOH/g, max.	5
Appearance	Clear liquid
Color, Gardner scale, max.	5
Viscosity, 60°C, cP/mPa·s	900-1500

TYPICAL PHYSICAL PROPERTIES

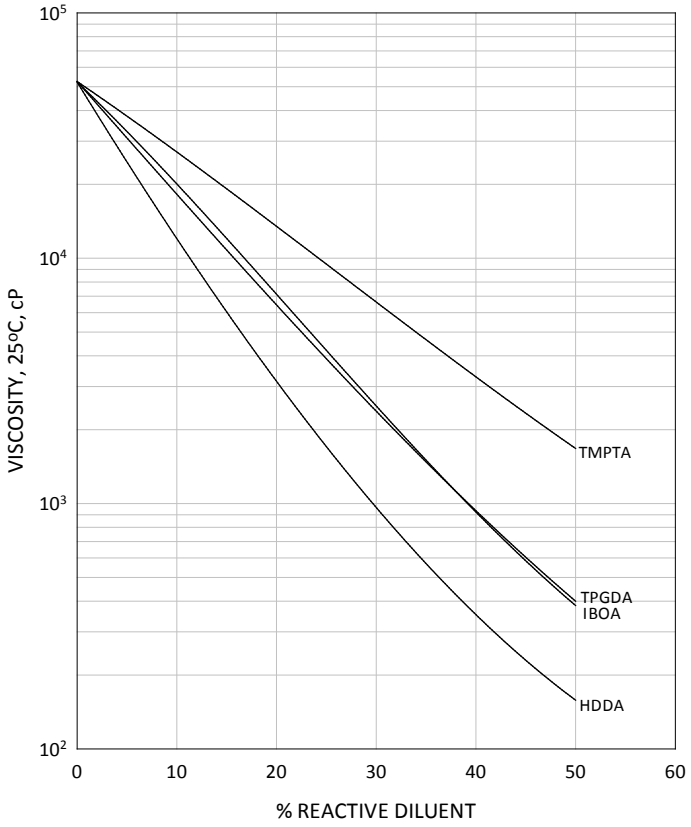
Density, g/ml at 25°C	1.18
Functionality, theoretical(1)	2
Oligomer, % by weight	>95

TYPICAL CURED PROPERTIES(2)

Tensile strength, psi (MPa)	6500 (45)
Elongation at break, %	43
Glass transition temperature,°C(3)	35

GRAPH I

EBECRYL 3500 - 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.

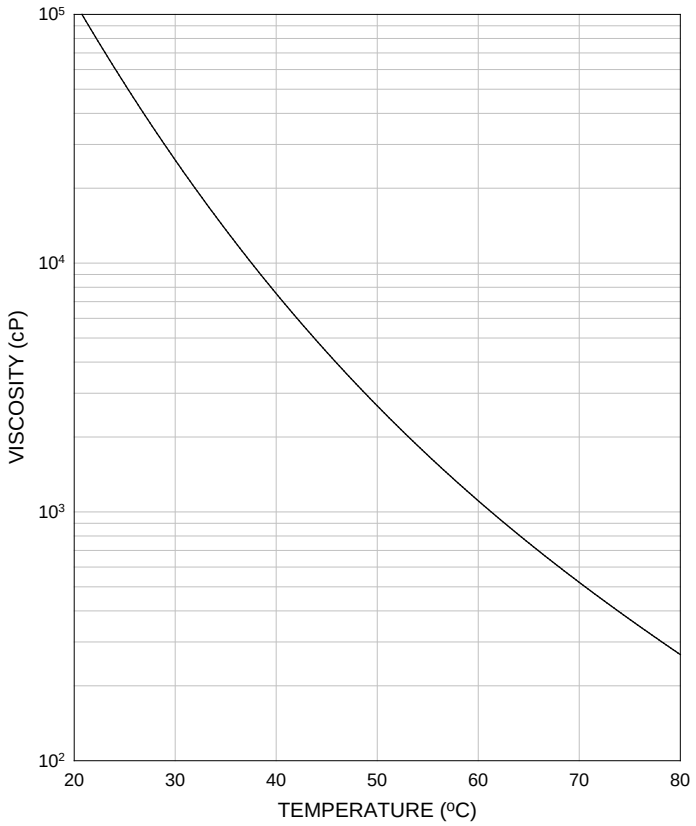
VISCOSITY REDUCTION

Graph I shows the viscosity reduction of EBECRYL 3500 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 avoiding 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 3500 with increasing temperature.

GRAPH II

EBECRYL 3500 - VISCOSITY VS. TEMPERATURE



PRECAUTIONS

Before using EBECRYL 3500, 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 3500.

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