

# EBECRYL® 3703

Amine Modified Bisphenol A Epoxy Diacrylate

March 2017



## INTRODUCTION

EBECRYL 3703 is an amine modified bisphenol A epoxy diacrylate that exhibits exceptionally fast cure via exposure to ultraviolet light (UV). Films of EBECRYL 3703 cured by UV or electron beam (EB) demonstrate good flexibility, high gloss and excellent chemical resistance. The amine modification can also improve adhesion to plastics.

## PERFORMANCE HIGHLIGHTS

EBECRYL 3703 is characterized by:

- Fast UV cure response
- Good pigment wetting

UV/EB cured products based on EBECRYL 3703 are characterized by the following performance properties:

- Good chemical resistance
- Good flexibility
- Good abrasion resistance
- High gloss
- Enhanced adhesion to plastics

The final 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 3703 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 and flexographic printing. EBECRYL 3703 is recommended for use in:

- Clear coatings for paper
- Topcoats for wood
- Lithographic ink vehicles
- Coatings for rigid and flexible plastics
- Screen ink vehicles

## SPECIFICATIONS

	VALUE
Acid value, mg KOH/g, max.	5
Appearance	Clear liquid
Color, Gardner scale, max.	5
Viscosity, 65.5°C, cP/mPa·s	2000-2800

## TYPICAL PHYSICAL PROPERTIES

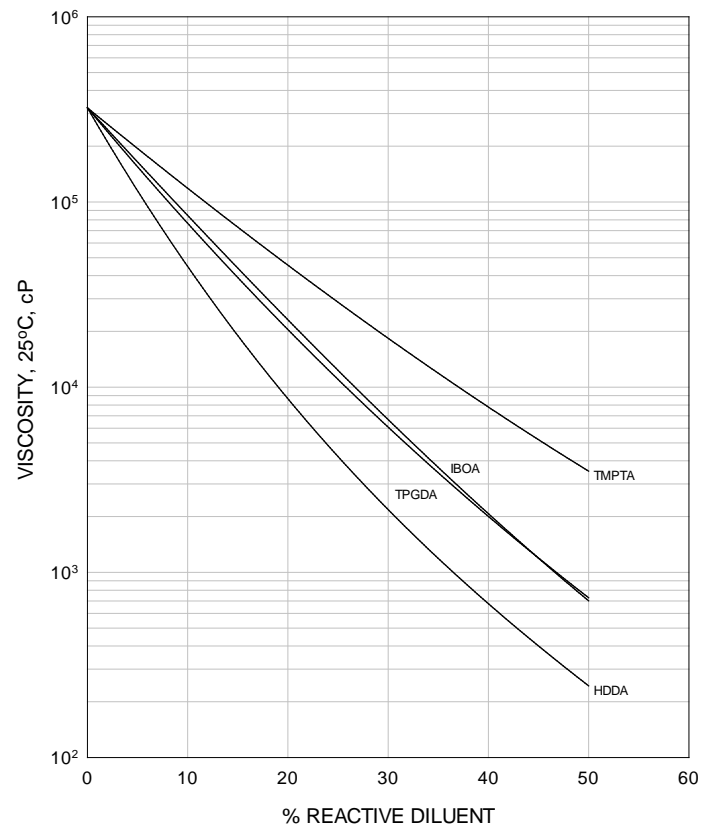
Density, g/ml at 25°C	1.18
Functionality, theoretical <sup>(1)</sup>	2
Oligomer, % by weight	>94

## TYPICAL CURED PROPERTIES<sup>(2)</sup>

Tensile strength, psi (MPa)	5900 (41)
Elongation at break, %	47
Glass transition temperature, °C <sup>(3)</sup>	57

## GRAPH I

EBECRYL 3703 - 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.

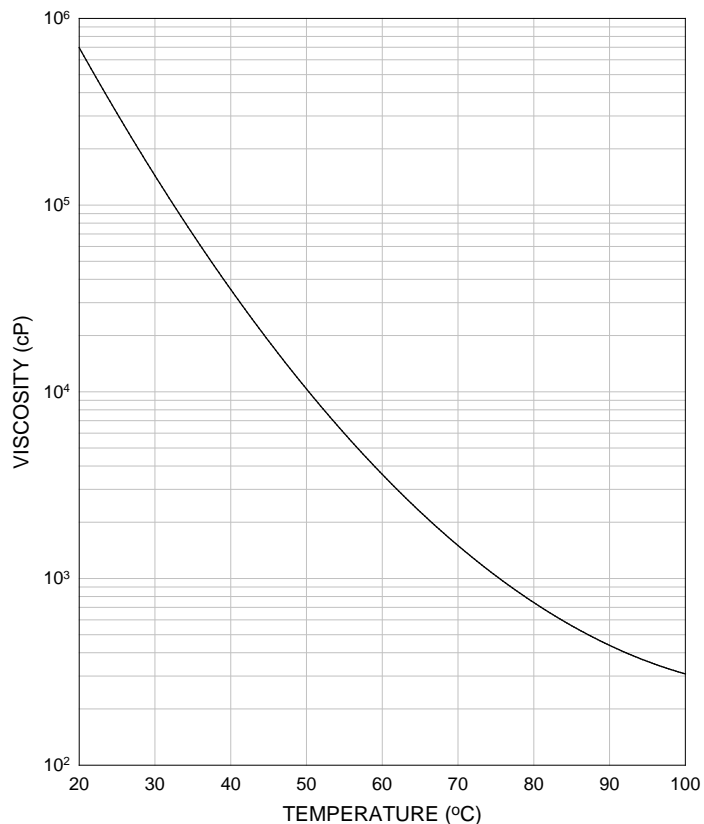
## VISCOSITY REDUCTIONS

Graph I shows the viscosity reduction of EBECRYL 3703 with 1,6-hexanediol diacrylate (HDDA)<sup>(1)</sup>, isobornyl acrylate (IBOA)<sup>(1)</sup>, trimethylolpropane triacrylate (TMPTA)<sup>(1)</sup>, and tripropylene glycol diacrylate (TPGDA)<sup>(1)</sup>. 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 diluent(s) used will influence performance properties such as hardness and flexibility.

Graph II illustrates the change in viscosity of EBECRYL 3703 with increasing temperature.

## GRAPH II

### EBECRYL 3703 - VISCOSITY VS. TEMPERATURE



## PRECAUTIONS

Before using EBECRYL 3703, 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 3703.

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

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