

# EBECRYL® 3415

Modified Bisphenol A Epoxy Acrylate

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## INTRODUCTION

EBECRYL 3415 is a modified bisphenol A epoxy acrylate diluted with 40% 1, 6-hexanediol diacrylate (HDDA)<sup>(1)</sup>. This acrylated epoxy was developed for ultraviolet light (UV) curable screen printing, and exhibits excellent reactivity and good adhesion to various non-porous substrates. EBECRYL 3415 meets all regulatory requirements and is no longer subject to the Significant New Use Rule (SNUR).

## PERFORMANCE HIGHLIGHTS

EBECRYL 3415 is characterized by:

- Excellent cure speed
- High gloss
- Good intercoat adhesion
- UV cured products based on EBECRYL 3415 exhibit excellent adhesion to a variety of plastic substrates including:
  - Polycarbonate
  - Polystyrene
  - Polyethylene terephthalate, glycol-modified (PET-G)
  - Vinyls – rigid, matte, and glossy
  - Polyvinyl chloride (PVC)

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 products containing EBECRYL 3415 may be applied via screen methods (flat bed or rotary) and are recommended for use in:

- Screen inks
- Coatings for a variety of plastics

EBECRYL 3415 is recommended for use in the screen printing industry as an excellent product for plastic applications in the following markets:

- Banner / POP
- Container
- CD
- Loose leaf
- Membranes / Switches

## SPECIFICATIONS

	VALUES
Color, Gardner scale, max.	2
Appearance	Clear liquid
Viscosity, 60°C, cP/mPa·s	1050-1450

## TYPICAL PROPERTIES

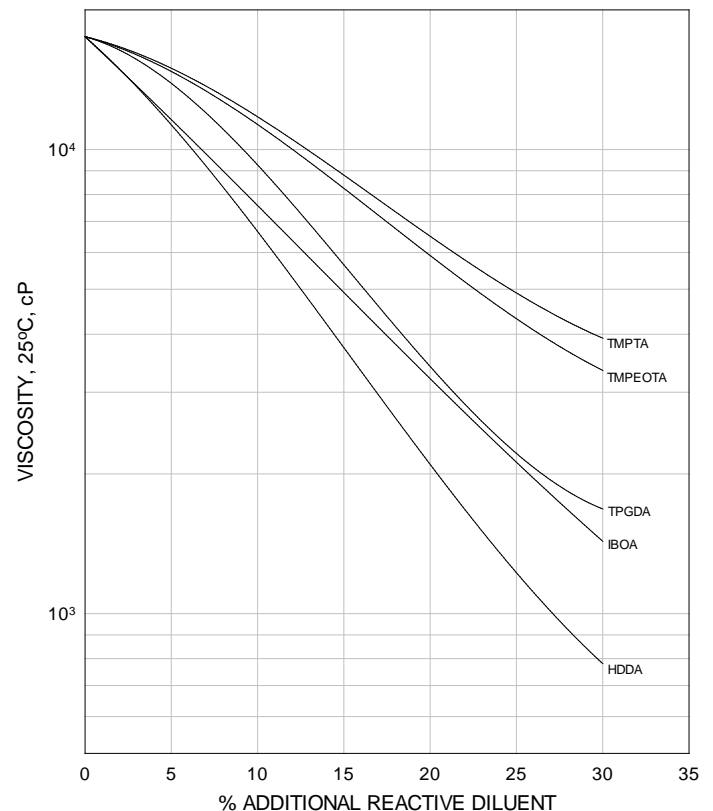
Density, g/ml at 25°C	1.10
Flash point, °C (est.)	>100
Functionality, theoretical <sup>(2)</sup>	1.5

## TYPICAL CURED PROPERTIES<sup>(3)</sup>

Tensile strength, psi (MPa)	6800 (47)
Elongation at break, %	3
Young's modulus, psi (MPa)	361000 (2490)
Glass transition temperature, °C <sup>(4)</sup>	68

## GRAPH I

EBECRYL 3415 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



(1) Product of allnex

(2) Theoretical determination based on the undiluted oligomer.

(3) UV cured 125 μ thick films.

(4) Determined by Dynamic Mechanical Analysis.

## VISCOSITY REDUCTION

Graph I shows the viscosity reduction of EBECRYL 3415 with 1,6-hexanediol diacrylate (HDDA), isobornyl acrylate (IBOA)<sup>(1)</sup>, trimethylolpropane triacrylate (TMPTA)<sup>(1)</sup>, trimethylolpropane ethoxy triacrylate (TMPEOTA)<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 reducing solvent emissions. The specific reactive diluents used will influence performance properties such as hardness and flexibility.

## PRECAUTIONS

Before using EBECRYL 3415, 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 3415.

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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