

LOW VISCOSITY ALIPHATIC EPOXY AND BISPHENOL A EPOXY ACRYLATE

INTRODUCTION

EBECRYL® 3200 is a blend of acrylated aliphatic and aromatic bisphenol A epoxy resins and exhibits relatively low viscosity and good wetting ability. Films of EBECRYL® 3200 cured by ultraviolet light (UV) or electron beam (EB) possess high gloss, flexibility and chemical resistance.

PERFORMANCE HIGHLIGHTS

EBECRYL® 3200 is characterized by:

- Low viscosity
- Good wetting

UV/EB cured products based on EBECRYL® 3200 are characterized by the following performance properties:

- High gloss
- Moderate flexibility
- 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® 3200 may be applied via direct or reverse roll, offset gravure, metering rod, slot die, knife over roll, air knife, curtain, immersion, spray and spin coating methods, as well as flexographic, lithographic and screen printing. EBECRYL® 3200 is recommended for:

- Clear coatings for paper
- Modifying lithographic ink vehicles
- Metal decorating and protective coatings
- Topcoats for wood
- High viscosity systems as a diluent

SPECIFICATIONS

Acid value, mg KOH/g	max. 3
Color, Gardner	max. 6
Epoxy content, %	max. 0.27
Viscosity, 25°C, mPa.s	1500 - 3000

TYPICAL PHYSICAL PROPERTIES

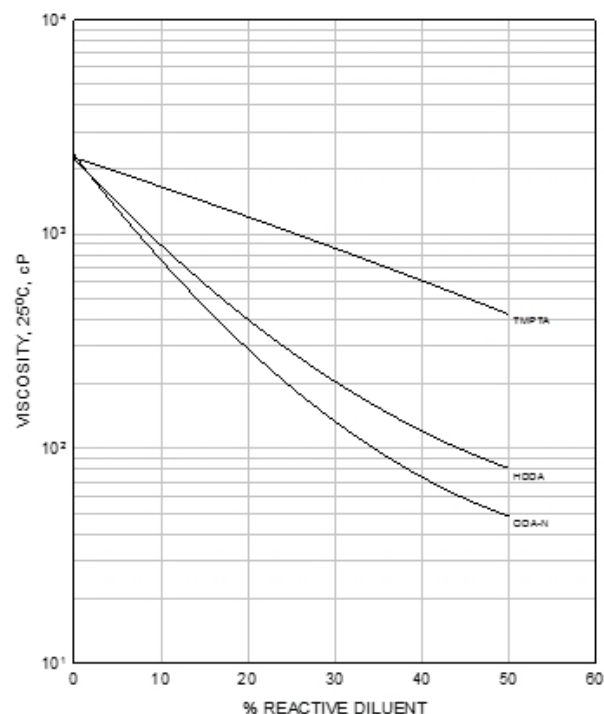
Density, g/cm³ at 25°C	1.10
Functionality, theoretical	1.6
Oligomer, % by weight	100

TYPICAL CURED PROPERTIES

Tensile strength, psi (MPa)	11900 (82)
Elongation at break, %	6
Glass transition temperature, °C	48

GRAPH I

EBECRYL® 3200 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



VISCOSITY REDUCTION

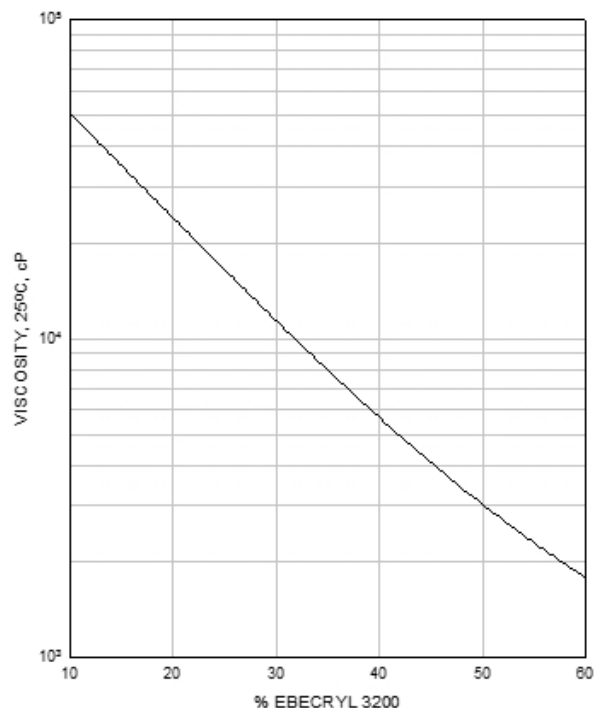
Graph I shows the viscosity reduction of EBECRYL® 3200 with 1,6-hexanediol diacrylate (HDDA)⁽¹⁾, octyl/decyl acrylate (ODA-N)⁽¹⁾, and trimethylolpropane triacrylate (TMPTA)⁽¹⁾. Although viscosity reduction can be achieved with non-reactive solvents, reactive diluents are preferred because they are essentially 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® 3700⁽¹⁾ when blended with EBECRYL® 3200⁽¹⁾.

⁽¹⁾ product of allnex

GRAPH II

EBECRYL® 3200 - VISCOSITY REDUCTION OF EBECRYL® 3700



PRECAUTIONS

Before using EBECRYL® 3200, 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® 3200.