

EBECRYL® 860

Epoxidized Soya Oil Acrylate

INTRODUCTION

EBECRYL 860 is an epoxidized soya oil acrylate especially suited to improving the flow and leveling of ultraviolet light (UV) or electron beam (EB) curable inks and coatings. Pigment wetting and adhesion are often enhanced when EBECRYL 860 is used as a modifier in inks and clear or pigmented coatings on paper and metal.

PERFORMANCE HIGHLIGHTS

Formulations containing EBECRYL 860 are characterized by:

- Improved flow and leveling
- Good pigment wetting
- Good substrate wetting
- Good hydrophilic-lipophilic balance for lithography

UV/EB cured products based on EBECRYL 860 are characterized by the following performance properties:

- Enhanced adhesion on paper and metal
- Good surface appearance
- Improved substrate wetting
- Good pigment wetting

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 860 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 flexographic, lithographic and screen printing. EBECRYL 860 is recommended as a modifying resin for:

- Overprint varnishes for paper
- Lithographic ink vehicles
- Metal decorating and protective coatings
- Screen ink vehicles
- Pigmented coatings for wood

(1) Test methods are available upon request.

(2) Theoretical determination based on the undiluted oligomer.

(3) UV cured 125 μ thick films.

(4) Determined by Dynamic Mechanical Analysis.

SPECIFICATIONS⁽¹⁾

	VALUE
Acid value, mg KOH/g, max.	15
Appearance	Clear liquid
Color, Gardner scale, max.	10
Viscosity, 25°C, cP/mPa·s	19000-31000

TYPICAL PHYSICAL PROPERTIES

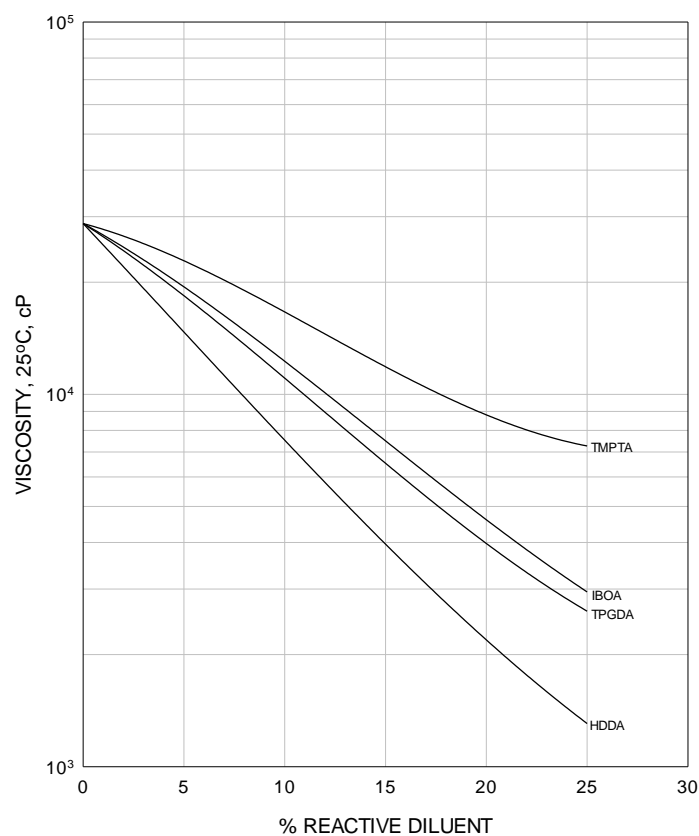
Density, g/ml at 25°C	1.03
Functionality, theoretical ⁽²⁾	3-4
Oligomer, % by weight	>95

TYPICAL CURED PROPERTIES⁽³⁾

Tensile strength, psi (MPa)	1000 (6.9)
Elongation at break, %	20
Glass transition temperature, °C ⁽⁴⁾	13

GRAPH I

EBECRYL 860 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



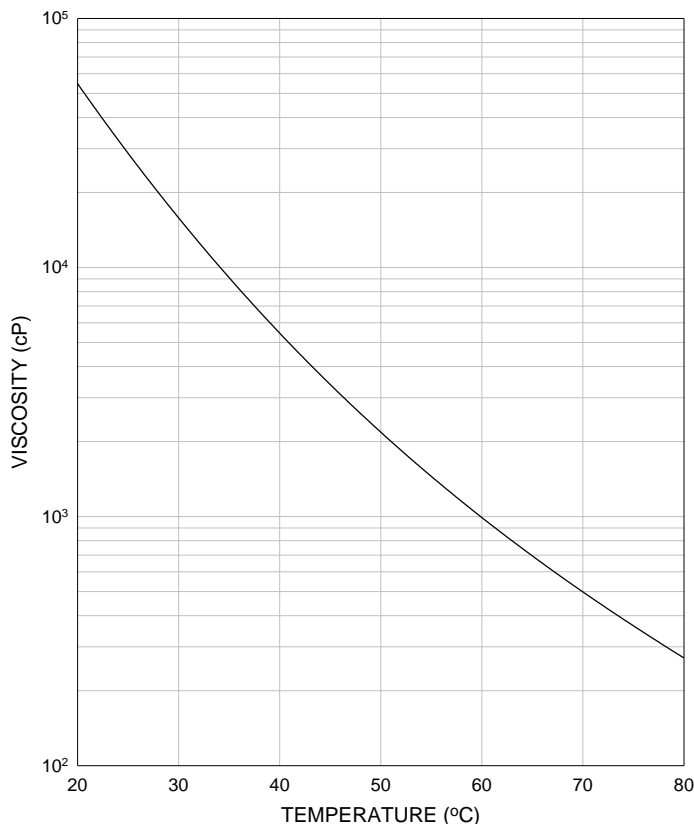
VISCOSITY REDUCTION

Graph I shows the viscosity reduction of EBECRYL 860 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.

Graph II illustrates the change in viscosity of EBECRYL 860 with increasing temperature.

GRAPH II

EBECRYL 860 - VISCOSITY VS. TEMPERATURE



(1) Product of Allnex

STORAGE AND HANDLING

Before using EBECRYL 860, consult the **Safety Data Sheet** for additional information on hazards, handling procedures, and recommended protective equipment.

The recommended storage temperature range for EBECRYL 860 is 4°C to 40°C (39°F to 104°F). 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.

PRECAUTIONS

Avoid contact with eyes and skin. Direct contact with this material may cause moderate eye and mild skin irritation. Contact with skin may cause a cross-allergic reaction in persons already sensitized to acrylate materials. Wash thoroughly after handling. Keep container tightly closed. Use with adequate ventilation.

Please refer to the **Guide to Safety, Health and Handling of Acrylate Oligomers and Monomers** for additional information on the safe handling of acrylates.

• Worldwide Contact Info: www.allnex.com •

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