

# EBECRYL® 830

## Polyester Hexa-acrylate

### INTRODUCTION

EBECRYL 830 is a polyester hexa-acrylate that exhibits fast cure response and moderate viscosity. Films of EBECRYL 830 cured by ultraviolet light (UV) or electron beam (EB) demonstrate good abrasion and scratch resistance, solvent resistance and hardness.

### PERFORMANCE HIGHLIGHTS

EBECRYL 830 is characterized by:

- Fast cure response
- Moderate viscosity

UV/EB cured products containing EBECRYL 830 are characterized by the following performance properties:

- Good abrasion/scratch resistance
- High surface hardness
- Solvent resistance

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 830 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 offset and screen printing. EBECRYL 830 is recommended for use in:

- Paper upgrading
- Coatings for wood and plastics
- Abrasion and scratch resistant coatings
- Dry offset inks
- Fast curing coatings and inks

(1) Test methods are available upon request.

(2) Theoretical determination based on the undiluted oligomer.

(3) UV cured 125  $\mu$  thick films.

(4) Determined by Dynamic Mechanical Analysis.

### SPECIFICATIONS<sup>(1)</sup>

	VALUE
Acid value, mg KOH/g, max.	30
Appearance	Clear liquid
Color, Gardner scale, max.	3
Viscosity, 25°C, cP/mPa·s	45000-55000

### TYPICAL PHYSICAL PROPERTIES

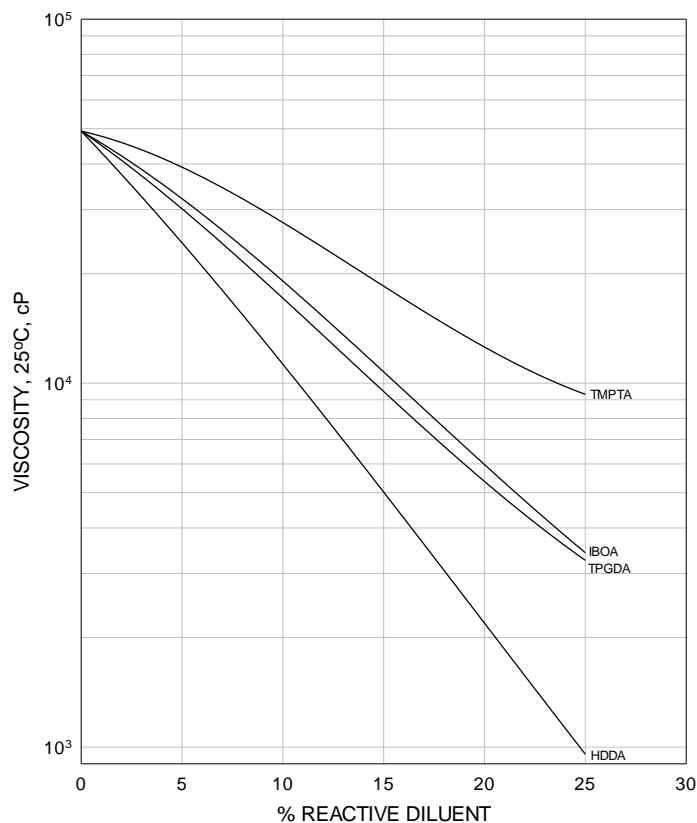
Density, g/ml at 25°C	1.18
Functionality, theoretical <sup>(2)</sup>	6
Oligomer, % by weight	>75
Acrylated polyols, % by weight	<25

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

Tensile strength, psi (MPa)	11165 (77)
Elongation at break, %	4
Glass transition temperature, °C <sup>(4)</sup>	60

### GRAPH I

EBECRYL 830 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



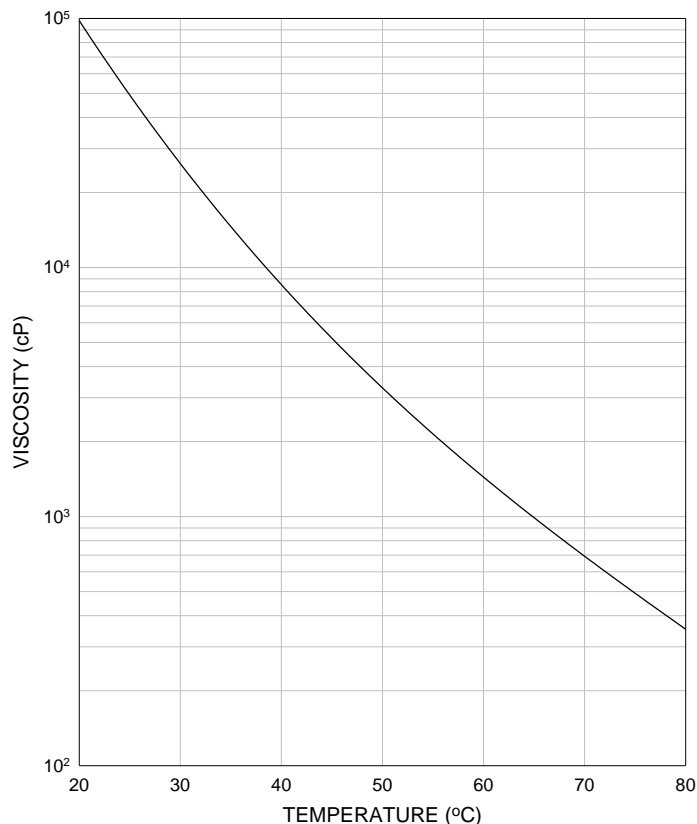
## VISCOSITY REDUCTION

Graph I shows the viscosity reduction of EBECRYL 830 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 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 830 with increasing temperature.

## GRAPH II

EBECRYL 830 - VISCOSITY VS. TEMPERATURE



(1) Product of Allnex

## STORAGE AND HANDLING

Before using EBECRYL 830, consult the **Safety Data Sheet** for additional information on hazards, handling procedures, and recommended protective equipment.

The recommended storage temperature range for EBECRYL 830 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 severe 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](http://www.allnex.com) •

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