

EBECRYL® 8296

Aliphatic Urethane Acrylate for Haptic Coatings

INTRODUCTION

EBECRYL 8296 is an aliphatic urethane acrylate designed for use in applications requiring haptic properties (e.g. “soft touch”). Films of EBECRYL 8296 cured via exposure to ultraviolet light (UV) or electron beam (EB) are soft, flexible, and resistant to yellowing coupled with high surface tack. Note that EBECRYL 8296 typically develops a semi-crystalline aspect upon storage. For additional information, please refer to the Storage and Handling section.

PERFORMANCE HIGHLIGHTS

EBECRYL 8296 is characterized by:

- Light color
- Semi-crystalline state

Cured products containing EBECRYL 8296 are characterized by the following performance properties:

- Haptic properties
- Soft, “silky” feel to the touch
- Flexible
- Exterior durability
- Non-yellowing
- Excellent adhesion to difficult substrates, particularly vinyl.

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

EBECRYL 8296 is recommended for use in coatings requiring soft touch/haptic property:

- In-mold decoration
- Coatings for plastics
- Automotive coatings
- Screen Inks
- Flexographic inks
- Exterior durable coatings

SPECIFICATIONS⁽¹⁾

	VALUE
Appearance	Viscous liquid or white solid
Color, Pt-Co scale ⁽²⁾ , max.	100
NCO, %, max.	0.1
Viscosity, 60°C, cP/mPa-s	1600-3200

TYPICAL PHYSICAL PROPERTIES

Density, g/ml at 25°C	1.10
Functionality, theoretical ⁽³⁾	3.0
Melting point (°C)	53
Oligomer, % by weight	100

TYPICAL CURED PROPERTIES⁽⁴⁾

Tensile strength, psi (MPa)	300 (2.1)
Elongation at break, %	18
Young's modulus, psi (MPa)	2000 (14)
Glass transition temperature, °C	-1

(1) Test methods are available upon request.

(2) Also referred to as APHA color.

(3) Theoretical determination based on the undiluted oligomer.

(4) UV cured 125 μ thick films.

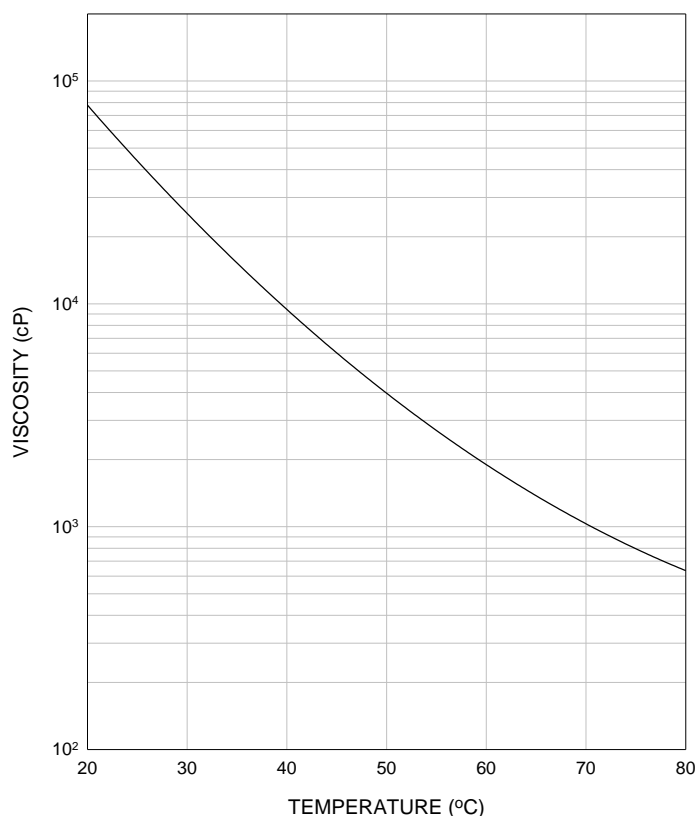
VISCOSITY REDUCTION

EBECRYL 8296 can be formulated with reactive dilutes such as dipropylene glycol diacrylate (DPGDA)⁽¹⁾, 1,6-hexanediol diacrylate (HDDA)⁽¹⁾, and tripropylene glycol diacrylate (TPGDA)⁽¹⁾. Although viscosity reductions can be achieved with non-reactive solvents, reactive diluents are preferred because they are essentially 100% converted during UV exposure to form an integral part of the coating, thus avoiding solvent emissions. The specific reactive diluent used will influence performance properties such as flexibility and adhesion.

Graph I illustrates the change in viscosity of EBECRYL 8296 with increasing temperature.

GRAPH I

EBECRYL 8296 - VISCOSITY VS. TEMPERATURE



STORAGE AND HANDLING

Before using EBECRYL 8296, consult the **Safety Data Sheet** for additional information on hazards, handling procedures, and recommended protective equipment.

The maximum recommended storage temperature for EBECRYL 8296 is 30°C (86°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.

Upon storage, EBECRYL 8296 may show signs of crystallization. This crystallization can be removed by heating containers of EBECRYL 8296 to a uniform temperature of 60°C. Ovens or hotboxes are recommended methods of heating. Heating tapes should not be used. In typical formulations, EBECRYL 8296 does not exhibit signs of crystallization.

PRECAUTIONS

Avoid contact with eyes, skin and clothing. Direct contact with this material may cause mild eye and skin irritation. Repeated or prolonged dermal contact may cause allergic skin reactions. Wash thoroughly after handling. Use with adequate ventilation. Keep container closed.

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

(1) Product of Allnex

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