

Aliphatic Urethane Acrylate

INTRODUCTION

EBECRYL® 8800-20R is an aliphatic urethane acrylate diluted with the reactive diluents tripropylene glycol diacrylate (TPGDA) and ethoxyethoxyethyl acrylate (EOEOEA). Films of EBECRYL® 8800-20R cured by ultraviolet light (UV) or electron beam (EB) exhibit toughness, flexibility, good exterior durability and resistance to yellowing.

PERFORMANCE HIGHLIGHTS

EBECRYL® 8800-20R is characterized by:

- Light color
- Crystalline semi-solid
- Low odor

UV/EB cured products containing EBECRYL® 8800-20R are characterized by the following performance properties:

- Excellent abrasion resistance
- Toughness
- Exterior durability
- Flexibility
- Chemical resistance
- Non-yellowing

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® 8800-20R 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. EBECRYL® 8800-20R is recommended for use in:

- Wood and vinyl floor coatings
- Coatings requiring exterior durability
- Coatings for wood and plastic

SPECIFICATIONS

Appearance, molten	Clear
Color, 65.5°C, Gardner	max. 2
NCO, %	max. 0.16
Viscosity, 65.5°C, mPa.s	1000 - 3000

TYPICAL PHYSICAL PROPERTIES

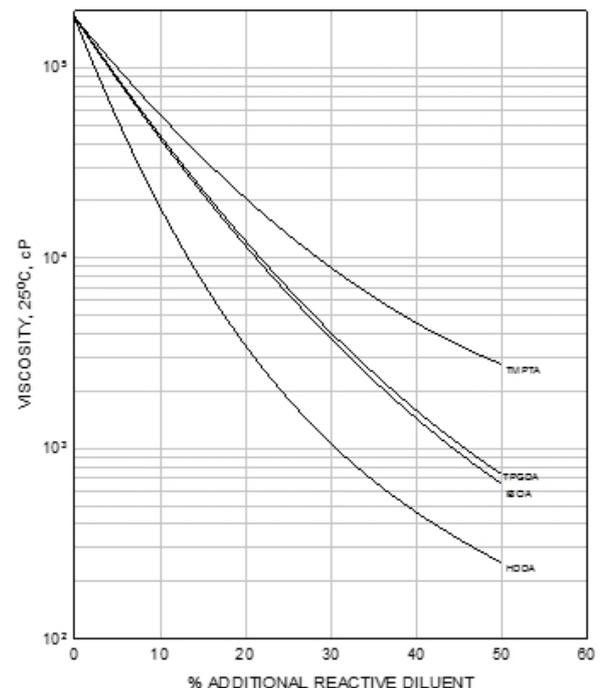
Density, g/cm ³ at 25°C	1.01
Functionality, theoretical	2.5
Oligomer, % by weight	72
TPGDA, % by weight	20
EOEOEA, % by weight	8

TYPICAL CURED PROPERTIES

Tensile strength, psi (MPa)	3400 (23)
Elongation at break, %	45
Glass transition temperature, °C	59

GRAPH I

EBECRYL® 8800-20R - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



VISCOSITY REDUCTION

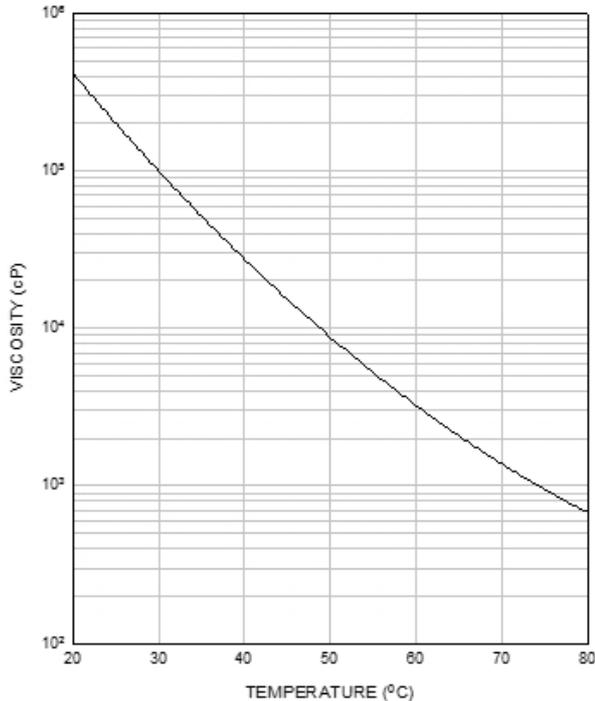
Graph I shows the viscosity reduction of EBECRYL® 8800-20R with 1,6-hexanediol diacrylate (HDDA)⁽¹⁾, isobornyl acrylate (IBOA)⁽¹⁾, trimethylolpropane triacrylate (TMPTA)⁽¹⁾ and tripropylene glycol diacrylate (TPGDA)⁽¹⁾. Although viscosity reduction can be achieved with non-reactive solvents, reactive 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.

⁽¹⁾ product of allnex

Graph II illustrates the change in viscosity of EBECRYL® 8800-20R with increasing temperature.

GRAPH II

EBECRYL® 8800-20R - VISCOSITY VS. TEMPERATURE



PRECAUTIONS

Before using EBECRYL® 8800-20R, 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.

Upon storage, EBECRYL® 8800-20R may show signs of crystallization. This crystallization can be removed by heating containers of EBECRYL 8800-20R 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® 8800-20R does not exhibit signs of crystallization.

See the SDS for the recommended storage temperature range for EBECRYL® 8800-20R.