EBECRYL® 8800

Technical Datasheet

ALIPHATIC URETHANE ACRYLATE

INTRODUCTION

EBECRYL® 8800 is an aliphatic urethane acrylate diluted with 10% by weight of the reactive diluent ethoxyethoxyethyl acrylate (EOEOEA). Films of EBECRYL® 8800 cured by ultraviolet light (UV) or electron beam (EB) exhibit excellent abrasion resistance, toughness, rapid cure response and resistance to yellowing.

PERFORMANCE HIGHLIGHTS

EBECRYL® 8800 is characterized by:

- Light color
- Crystalline semi-solid
- Rapid cure response

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

- Excellent abrasion resistance
- Good toughness
- Good flexibility
- Exterior durability

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 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 screen printing. EBECRYL® 8800 is recommended for use in:

- Wood topcoats
- Coatings for rigid and flexible plastics
- Floor tile coatings
- Overprint varnishes
- Laminating adhesives
- Screen ink vehicles and clear coatings
- Metal decorating ink vehicles and clear coatings
- Coatings for magnetic tape or discs

SPECIFICATIONS

Color, 65.5°C, Gardner	max. 1
NCO, %	max. 0.2
Viscosity, 65.5°C, mPa.s	5000 - 13000

TYPICAL PHYSICAL PROPERTIES

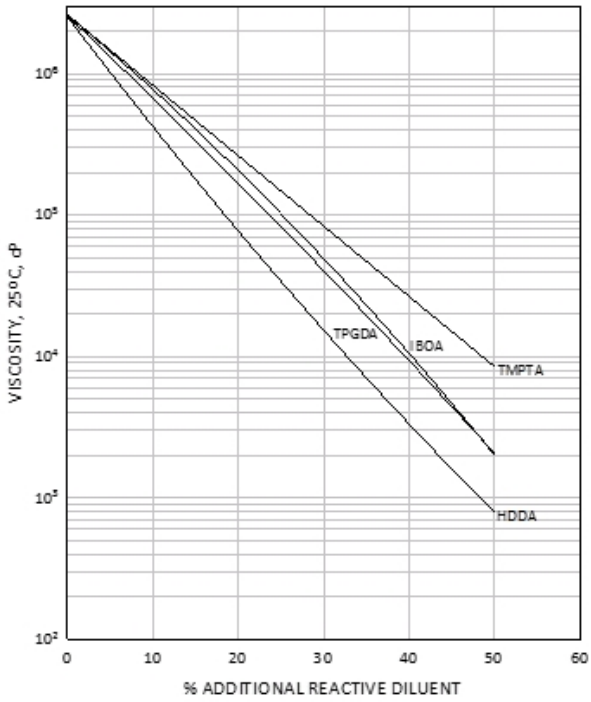
Density, g/cm³ at 25°C	1.05
Functionality, theoretical	2.5
Oligomer, % by weight	90
EOEOEA, % by weight	10

TYPICAL CURED PROPERTIES

Tensile strength, psi (MPa)	3150 (22)
Elongation at break, %	83
Glass transition temperature, °C	48

GRAPH I

EBECRYL® 8800 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



VISCOSITY REDUCTION

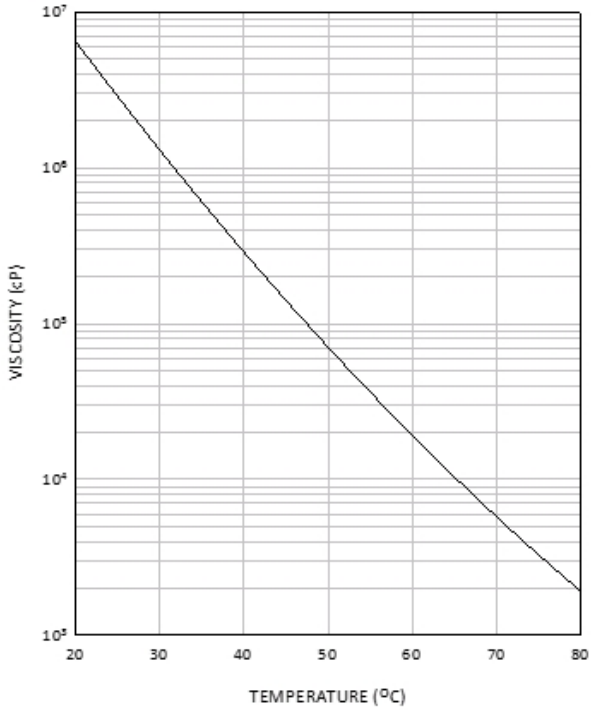
Graph I shows the viscosity reduction of EBECRYL® 8800 with 1,6-hexanediol diacrylate (HDDA)[(1)], isobornyl acrylate (IBOA)[(1)], trimethylolpropane triacrylate (TMPTA)[(1)] and tripropylene glycol diacrylate (TPGDA)[(1)]. Although viscosity reduction can be achieved with non-reactive solvents, reactive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

GRAPH II

EBECRYL® 8800 - VISCOSITY VS. TEMPERATURE



PRECAUTIONS

Before using EBECRYL® 8800, 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 may show signs of crystallization. This crystallization can be removed by heating containers of EBECRYL® 8800 to a uniform temperature of 70°C. Ovens or hotboxes are recommended methods of heating. Heating tapes should not be used. In typical formulations, EBECRYL® 8800 does not exhibit signs of crystallization.

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