

TIN-FREE⁽¹⁾ ALIPHATIC URETHANE ACRYLATE

⁽¹⁾ EBECRYL® 286 does not contain intentionally added organic tin compounds

INTRODUCTION

EBECRYL® 286 is an aliphatic urethane diacrylate oligomer diluted 25% with tripropylene glycol diacrylate (TPGDA) monomer. Films of EBECRYL® 286 cured by ultraviolet light (UV) or electron beam (EB) exhibit excellent exterior durability, toughness, and flexibility, as well as the non-yellowing properties typical of an aliphatic urethane.

PERFORMANCE HIGHLIGHTS

EBECRYL® 286 is characterized by:

- Light color

UV/EB cured products containing EBECRYL® 286 are characterized by the following performance properties:

- Good flexibility
- Toughness
- Excellent exterior durability
- Non-yellowing

The actual properties of UV/EB cured products also depend on the selection of the other formulation components such as reactive diluents, additives and photo initiators.

SUGGESTED APPLICATIONS

Formulated UV/EB curable products containing EBECRYL 286 may be applied via lithographic, screen, gravure, direct or reverse roll, and curtain coating methods. EBECRYL® 286 is recommended for use in:

- Clear and pigmented coatings for wood, plastics, metal and cork where good exterior durability is required.

SPECIFICATIONS

Appearance	clear liquid
Color, Gardner	max. 2
Viscosity at 25°C, mPa.s	18000 - 28000

TYPICAL PHYSICAL PROPERTIES

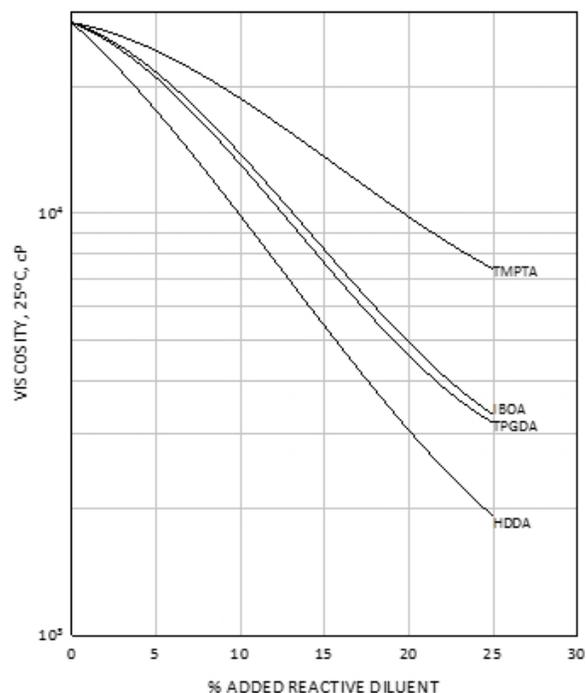
Density, g/cm ³ at 25°C	1.13
Functionality, theoretical	2
Oligomer, % by weight	75
TPGDA, % by weight	25

TYPICAL CURED PROPERTIES

Tensile strength, psi (MPa)	6000 (41.4)
Elongation at break, %	56
Glass transition temperature, °C	42

GRAPH I

EBECRYL® 286 VISCOSITY REDUCTION WITH REACTIVE DILUENTS



VISCOSITY REDUCTION

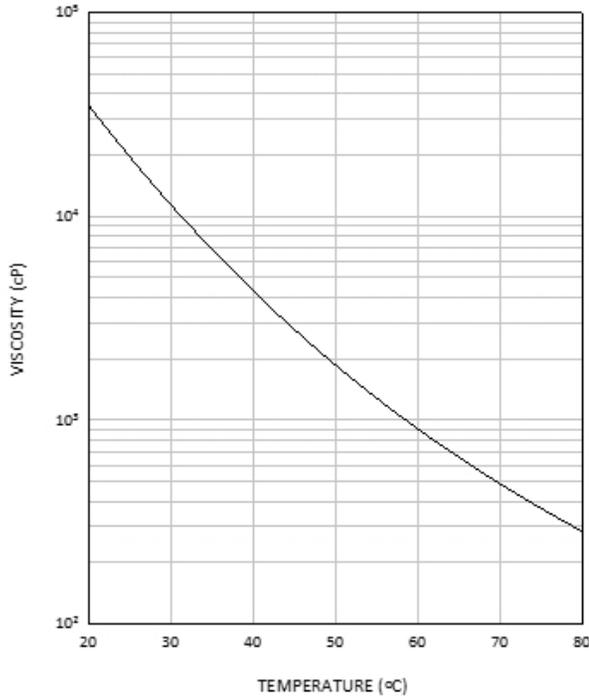
Graph I shows the viscosity reduction of EBECRYL® 286 with 1,6-hexanediol diacrylate (HDDA)⁽¹⁾, isobornyl acrylate (IBOA)⁽¹⁾, trimethylolpropane triacrylate (TMPTA)⁽¹⁾ and tripropylene glycol diacrylate (TPGDA)⁽¹⁾. Although viscosity reduction can be achieved with non-reactive solvents, reactive diluents are preferred because they are essentially 100 percent converted during UV/EB exposure to form a part of the coating, 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® 286 with increasing temperature.

GRAPH II

EBECRYL® 286 - VISCOSITY VS. TEMPERATURE



PRECAUTIONS

Before using EBECRYL® 286, 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.

See the SDS for the recommended storage temperature range for EBECRYL® 286.