

# EBECRYL® 294/25

Aliphatic Urethane Triacrylate

December 2017



## INTRODUCTION

EBECRYL 294/25 is an aliphatic urethane triacrylate diluted 25% by weight with the reactive diluent 1,6-hexanediol-diacrylate (HDDA)<sup>(1)</sup>. Films of EBECRYL 294/25 cured by ultraviolet light (UV) or electron beam (EB) exhibit excellent abrasion and stain resistance, good exterior durability, toughness, and are resistant to yellowing.

## PERFORMANCE HIGHLIGHTS

EBECRYL 294/25 is characterized by:

- Light color

UV/EB cured products based on EBECRYL 294/25 are characterized by the following performance properties:

- Excellent abrasion resistance and stain resistance
- Good exterior durability
- Toughness
- 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 photoinitiators.

## SUGGESTED APPLICATIONS

Formulated UV/EB curable products containing EBECRYL 294/25 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 294/25 is recommended for use in:

- Clear coatings for wood and vinyl flooring
- Exterior durable coatings
- Coatings requiring high abrasion resistance, stain resistance and toughness

## SPECIFICATIONS

	VALUE
Appearance	Clear liquid
Color, Gardner scale, max.	2
Viscosity at 60°C, cP/mPa-s	6000-8500

## TYPICAL PHYSICAL PROPERTIES

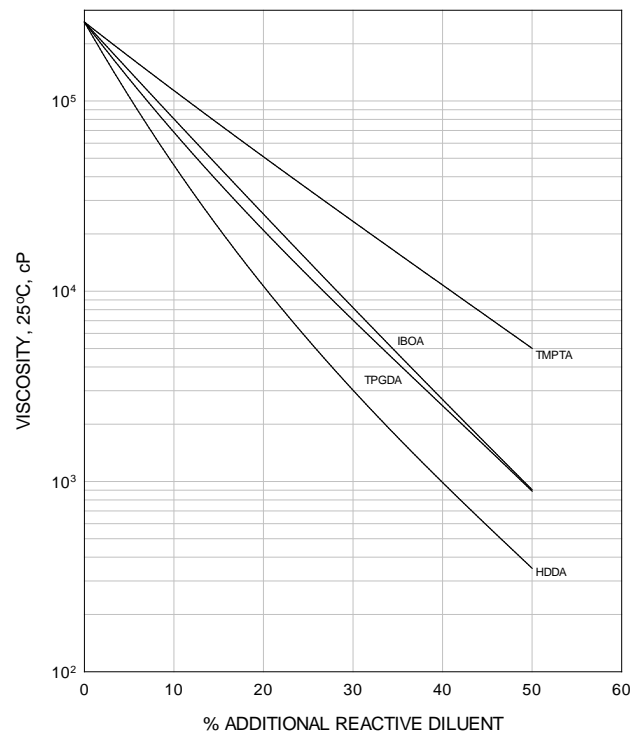
Density, g/ml at 25°C	1.11
Functionality, theoretical <sup>(2)</sup>	3
Oligomer, % by weight	75
HDDA, % by weight	25

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

Tensile strength, psi (MPa)	9230 (64)
Elongation at break, %	1.6
Young's modulus, psi (MPa)	795000 (5481)

## GRAPH I

EBECRYL 294/25 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



(1) Product of allnex

(2) Theoretical determination based on the undiluted oligomer.

(3) UV cured 125 μ thick films.

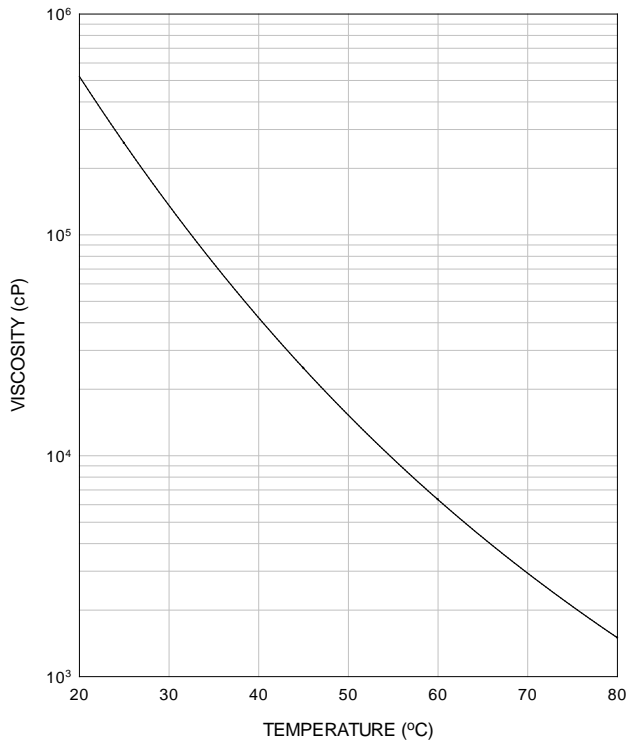
## VISCOSITY REDUCTION

Graph I shows the viscosity reduction of EBECRYL 294/25 with 1,6-hexanediol diacrylate (HDDA), 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 294/25 with increasing temperature.

## GRAPH II

### EBECRYL 294/25 - VISCOSITY VS. TEMPERATURE



## PRECAUTIONS

Before using EBECRYL 294/25, 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 294/25.

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

(1) Product of allnex

[www.allnex.com](http://www.allnex.com)

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