

# EBECRYL® 303

Diluted Hydrocarbon Polymer

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## INTRODUCTION

EBECRYL 303 is a polymeric resin diluted 45% with the monomer 1,6-hexanediol diacrylate (HDDA)<sup>(1)</sup>. This material is designed to be used alone or in combination with other UV/EB curable oligomers to provide improved adhesion of inks and coatings on plastic substrates.

## PERFORMANCE HIGHLIGHTS

EBECRYL 303 is characterized by:

- Light color
- Low viscosity

UV/EB cured products containing EBECRYL 303 are characterized by the following performance properties:

- Improved adhesion
- Good exterior durability

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

## SUGGESTED APPLICATIONS

Formulated UV/EB curable products containing EBECRYL 303 may be applied via screen, gravure, inkjet, direct or reverse roll, and curtain coating methods.

EBECRYL 303 is recommended for use in:

- Screen printing inks
- Inkjet inks
- Flexography
- Letterpress applications
- Inks and coatings on plastics such as polycarbonate, polyester, polyolefins, polystyrene, and PVC

Typical use level is 25 to 75% of the total formulation. EBECRYL 303 exhibits excellent compatibility with typical acrylate oligomers and monomers.

Table 1 compares the adhesion of formulations containing EBECRYL 303 and EBECRYL 745<sup>(2)</sup>. EBECRYL 303 and EBECRYL 745 both provide excellent adhesion to unacquered Leneta opacity charts (form N2C), untreated polycarbonate film and BOPP. EBECRYL 303 provides better adhesion than EBECRYL 745 on corona treated LDPE. In all cases, the EBECRYL 303 based formulation provides adhesion at much lower viscosity.

## SPECIFICATIONS

	VALUE
Appearance	Clear liquid

## TYPICAL PHYSICAL PROPERTIES

Density, g/ml at 25°C	1.10
HDDA, % by weight	45
Viscosity, 25°C, cP/mPa·s	450-650

## TABLE I

### COMPARISON OF EBECRYL 303 AND EBECRYL 745

	A	B
EBECRYL 303	75.0	-
EBECRYL 745	-	75.0
HDDA	10.0	10.0
TMPEOTA <sup>(3)</sup>	10.0	10.0
Photoinitiator <sup>(4)</sup>	5.0	5.0
EBECRYL 350 <sup>(5)</sup>	0.5	0.5
Viscosity at 25°C, cP	182	3790
cure dose, mJ/cm <sup>2</sup>	296	275
% adhesion <sup>(6)</sup>		
Leneta opacity chart	100	100
polycarbonate	100	100
LDPE (corona treated)	100	75
BOPP	100	100

(1) Product of allnex

(2) EBECRYL 745 is an acrylic oligomer/monomer blend; product of allnex.

(3) Trimethylolpropane ethoxy triacrylate; product of allnex.

(4) E.g. Speedcure 500, product of Lambson

(5) EBECRYL 350 is an acrylated silicone additive; product of allnex.

(6) Coatings were applied to substrates at ~0.5 mil thickness and cured at the specified UV dose with one 300 watt/inch Fusion H lamp. Adhesion was tested with a crosshatch tape test.

## PRECAUTIONS

Before using EBECRYL 303, 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 303.

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

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