

# EBECRYL® 436

Chlorinated Polyester

March 2017



## INTRODUCTION

EBECRYL 436 is a reactive chlorinated polyester resin diluted 40% with the reactive diluent trimethylolpropane triacrylate (TMPTA)<sup>(1)</sup>. EBECRYL 436 exhibits good lithographic behavior and pigment wetting properties, and fast cure response in ultraviolet light (UV) curable coatings and inks. Cured films of EBECRYL 436 display good adhesion to metals, plastics and paper.

## PERFORMANCE HIGHLIGHTS

EBECRYL 436 is characterized by:

- Good pigment wetting
- Good lithographic behavior
- Fast UV cure response

UV cured products containing EBECRYL 436 are characterized by the following performance properties:

- Good adhesion to metals, plastics and paper

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

## SUGGESTED APPLICATIONS

Formulated UV curable products containing EBECRYL 436 may be applied via lithographic, screen, gravure, direct or reverse roll, and curtain coating methods. EBECRYL 436 is recommended for:

- Wet lithographic inks for paper, plastics, and metals
- Promoting adhesion for coatings on metal, plastics and paper
- Overprint varnishes applied by lithography
- Post-formable inks

## TYPICAL TACK RANGES<sup>(2)</sup>

Oligomer / Reactive diluent	Tack, g-m
EBECRYL 436	20-22
EBECRYL 436 / 5% OTA 480 <sup>(3)</sup>	17-19
EBECRYL 436 / 10% OTA 480	9-11
EBECRYL 436 / 5% TPGDA <sup>(4)</sup>	15-17
EBECRYL 436 / 10% TPGDA	5-7

## SPECIFICATIONS

	VALUE
Acid value, mg KOH/g, max	25
Appearance	Clear liquid
Color, Gardner scale, max.	5
Viscosity, 60°C, cP/mPa-s	1350-1650

## TYPICAL PROPERTIES

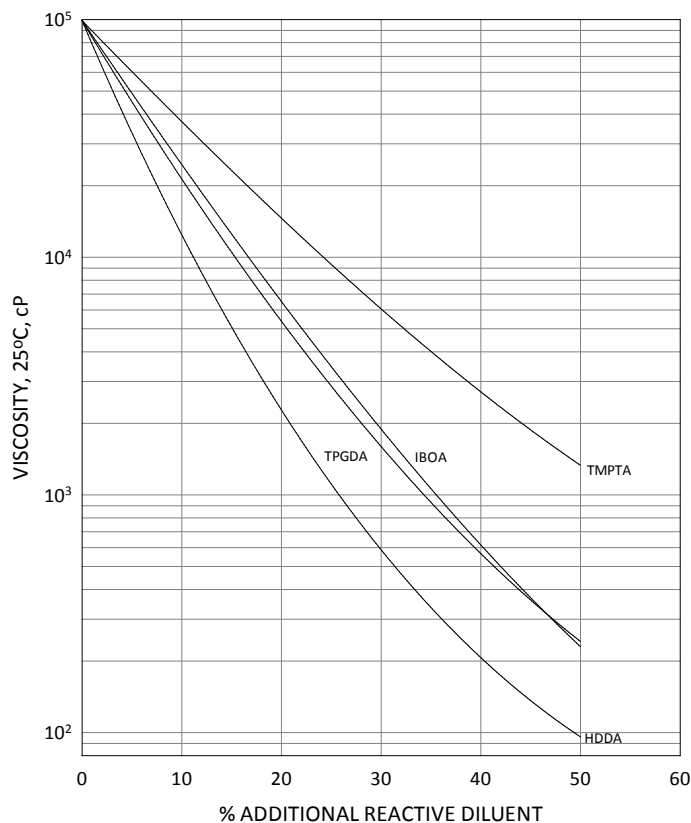
Density, g/ml at 25°C	1.28
Oligomer, % by weight	60
TMPTA, % by weight	40

## TYPICAL CURED PROPERTIES<sup>(5)</sup>

Tensile strength, psi (MPa)	2300 (16)
Elongation at break, %	0.7
Young's modulus, psi (Mpa)	446000 (3076)
Glass transition temperature, °C <sup>(6)</sup>	54

## GRAPH I

EBECRYL 436 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



(1) Product of allnex

(2) 400 RPM, 90°F, 3 minutes; Thwing-Albert Electronic Inkometer

(3) Propoxylated glycerol triacrylate, product of allnex

(4) Tripropylene glycol diacrylate, product of allnex

(5) UV cured 125 μ thick films.

(6) Determined by Dynamic Mechanical Analysis.

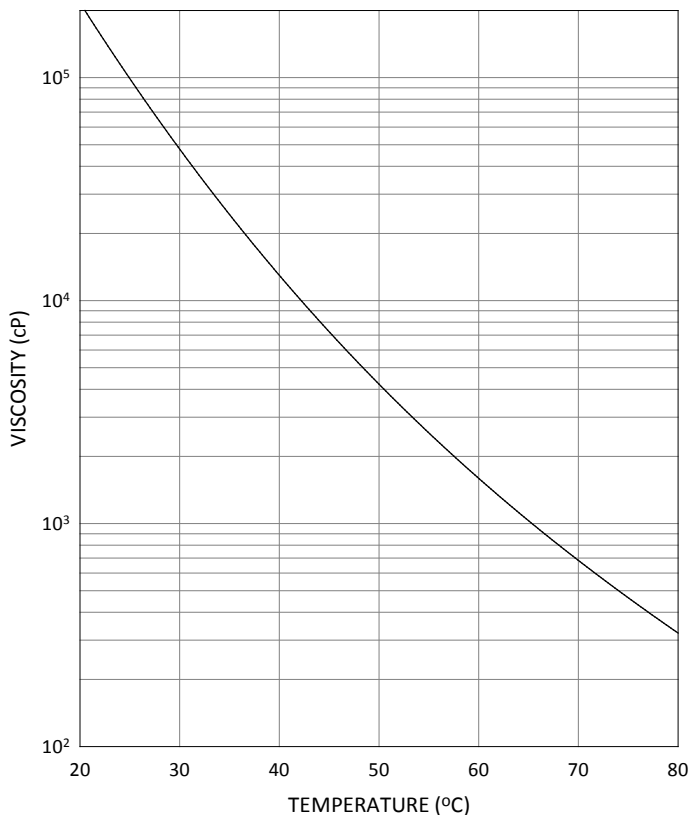
## VISCOSITY REDUCTION

Graph I shows the viscosity reduction of EBECRYL 436 with 1,6-hexanediol diacrylate (HDDA)<sup>(1)</sup>, isobornyl acrylate (IBOA)<sup>(1)</sup>, trimethylolpropane triacrylate (TMPTA)<sup>(1)</sup>, and tripropylene glycol diacrylate (TPGDA). 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 436 with increasing temperature.

## GRAPH II

### EBECRYL 436 - VISCOSITY VS. TEMPERATURE



## PRECAUTIONS

Before using EBECRYL 436, 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 436.

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

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