

EBECRYL® 438

Chlorinated Polyester

March 2017



INTRODUCTION

EBECRYL 438 is a reactive chlorinated polyester resin diluted 40% with the reactive diluent OTA-480⁽¹⁾. EBECRYL 438 exhibits good lithographic behavior and pigment wetting properties, and fast cure response in ultraviolet light (UV) curable coatings and inks. Films of EBECRYL 438 cured by ultraviolet light (UV) display good adhesion to metals, plastics and paper.

PERFORMANCE HIGHLIGHTS

EBECRYL 438 is characterized by:

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

UV cured products containing EBECRYL 438 are characterized by the following performance properties:

- Good adhesion to metals, plastics and paper

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 curable products containing EBECRYL 438 may be applied via lithographic, screen, gravure, direct or reverse roll, and curtain coating methods. EBECRYL 438 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⁽²⁾

Oligomer / Reactive diluent	Tack, g-m
EBECRYL 438	19-21
EBECRYL 438 / 5% OTA-480	16-18
EBECRYL 438 / 10% OTA-480	8-10
EBECRYL 438 / 5% TPGDA ⁽³⁾	14-16
EBECRYL 438 / 10% TPGDA	6-8

SPECIFICATIONS

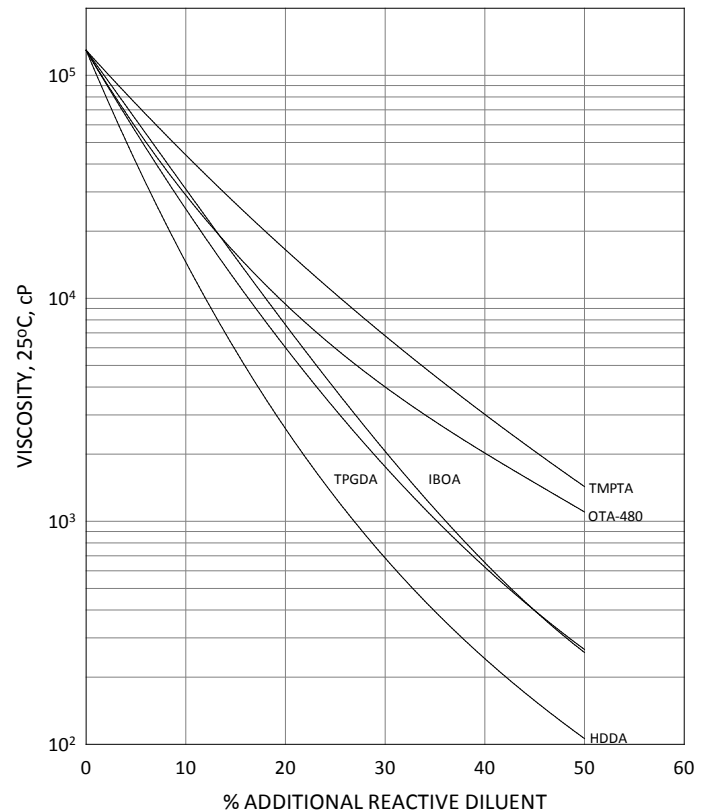
	VALUE
Acid value, mg KOH/g, max.	25
Appearance	Clear liquid
Color, Gardner scale, max.	5
Viscosity, 60°C, cP/mPa-s	1350-1650

TYPICAL PROPERTIES

Density, g/ml at 25°C	1.26
Oligomer, % by weight	60
OTA-480, % by weight	40

GRAPH I

EBECRYL 438 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



(1) Propoxylated glycerol triacrylate, product of allnex.

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

(3) Tripropylene glycol diacrylate, product of allnex.

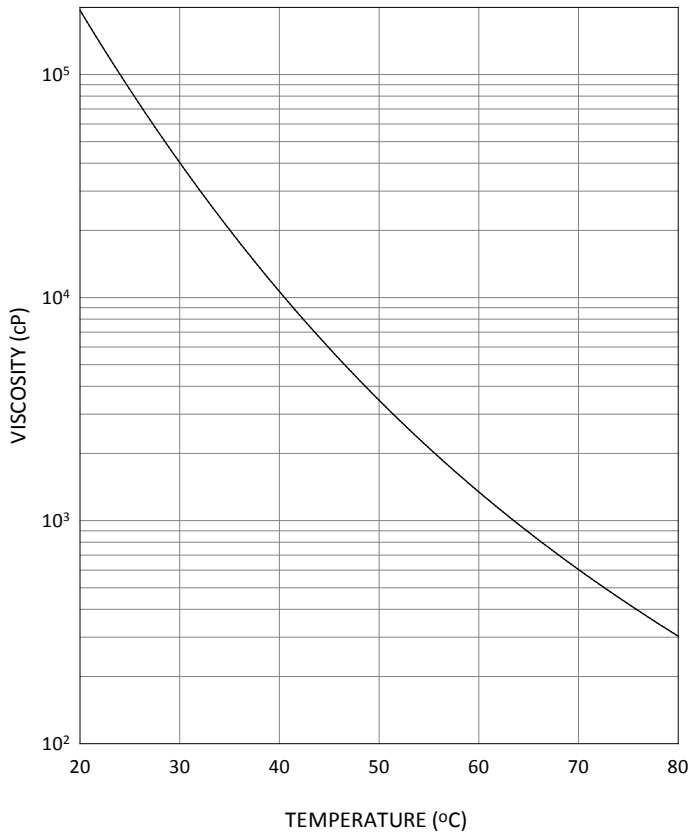
VISCOSITY REDUCTION

Graph I shows the viscosity reduction of EBECRYL 438 with 1,6-hexanediol diacrylate (HDDA)⁽¹⁾, isobornyl acrylate (IBOA)⁽¹⁾, propoxylated glycerol triacrylate (OTA-480), 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.

Graph II illustrates the change in viscosity of EBECRYL 438 with increasing temperature.

GRAPH II

EBECRYL 438 - VISCOSITY VS. TEMPERATURE



PRECAUTIONS

Before using EBECRYL 438, 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 438.

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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