

EBECRYL® 876

Polyester Acrylate

January 2019



INTRODUCTION

EBECRYL 876 is a polyester acrylate resin designed for use in UV/EB curable coating applications, in particular over-print varnishes (OPVs). EBECRYL 876 provides a bisphenol A (BPA) free alternative to epoxy acrylate based formulations while providing equivalent performance properties such as fast cure response, high gloss, hardness and excellent chemical resistance.

PERFORMANCE HIGHLIGHTS

EBECRYL 876 is characterized by:

- BPA free
- Low viscosity
- Light color

UV/EB cured products based on EBECRYL 876 are characterized by the following performance properties:

- Fast UV/EB cure response
- Excellent chemical resistance
- High gloss
- High surface hardness

The final 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 876 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 offset and screen printing. EBECRYL 876 is recommended in:

- Overprint varnishes
- Clear coatings for paper and plastics

TYPICAL PHYSICAL PROPERTIES

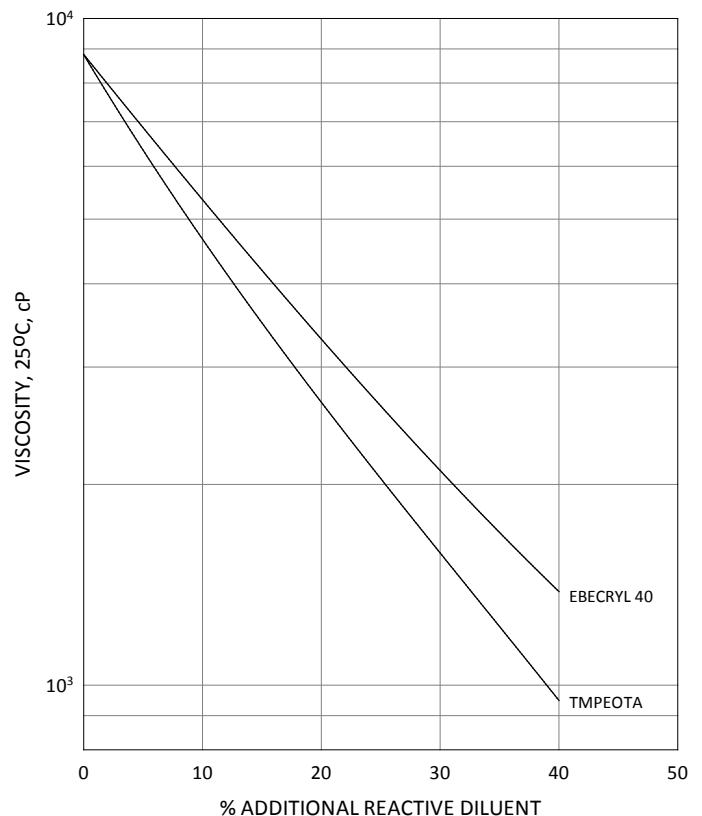
Appearance	Clear liquid
Color, Gardner	<1
Density, g/ml at 25°C	1.15
Functionality, theoretical ⁽¹⁾	2.2
Viscosity, 25°C, cP/mPa·s	8800

TYPICAL CURED PROPERTIES⁽²⁾

Tensile strength, psi (MPa)	2900 (20)
Elongation at break, %	16
Young's modulus, psi (MPa)	75600 (535)
Glass transition temperature, °C ⁽³⁾	36

GRAPH I

EBECRYL 876 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



(1) Theoretical determination based on the undiluted oligomer.

(2) UV cured ~100µ thick films

(3) Dynamic mechanical thermal analysis; $\tan \delta_{max}$

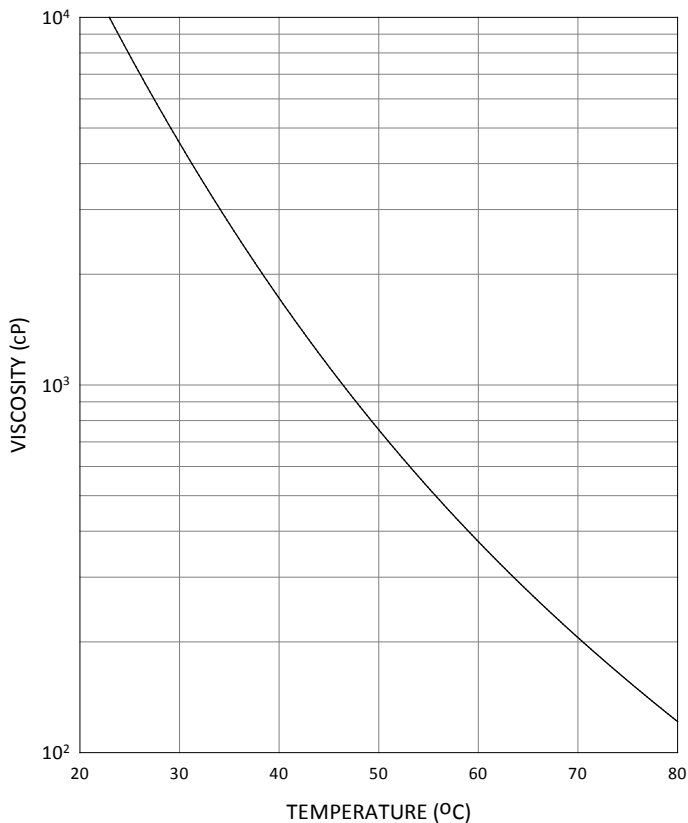
VISCOSITY REDUCTION

Graph I shows the viscosity reduction of EBECRYL 876 with trimethylolpropane ethoxy triacrylate (TMPEOTA)⁽¹⁾, and EBECRYL 40⁽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 876 with increasing temperature.

GRAPH II

EBECRYL 876 - VISCOSITY VS. TEMPERATURE



PRECAUTIONS

Before using EBECRYL 876, 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 876.

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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