

POLYESTER ACRYLATE OLIGOMER

INTRODUCTION

EBECRYL® 875 is an ultraviolet light (UV) or electron beam (EB) curable polyester acrylate for either wet or dry offset printing on plastic substrates. Inks made using EBECRYL® 875 obtain excellent adhesion to calendered vinyl, polystyrene, polyolefins, polycarbonate and PVC. The water balance of this product allows inks based upon it to be run on press with low amounts of fountain solution: a key parameter for printing on non-absorbent substrates. EBECRYL® 875 also exhibits low odor.

PERFORMANCE HIGHLIGHTS

- Primary component for wet or dry offset inks to be printed on plastics
- Excellent water balance for printing on non-absorbent substrates
- Excellent adhesion to a variety of plastic substrates including calendered vinyl, polystyrene, polyolefins, polycarbonate and PVC
- Neither chlorinated nor acidic in nature
- Very low misting
- Low odor

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

SUGGESTED APPLICATIONS

EBECRYL® 875 is recommended for wet or dry offset inks, specifically for printing credit cards and smart cards. It may also be used for printing on plastic signage and banners as well as containers.

TYPICAL TACK RANGES

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Oligomer / Reactive diluent	Tack, g-m
EBECRYL® 875	13
EBECRYL® 875/5% OTA-480	10
EBECRYL® 875/10% OTA-480	7
EBECRYL® 875/5% TPGDA	9
EBECRYL® 875/10% TPGDA	6

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

SPECIFICATIONS

Acid value, mg KOH/g	max. 2.0
Appearance	Clear liquid
Viscosity, 60°C, mPa.s	1300 - 2100

TYPICAL PROPERTIES

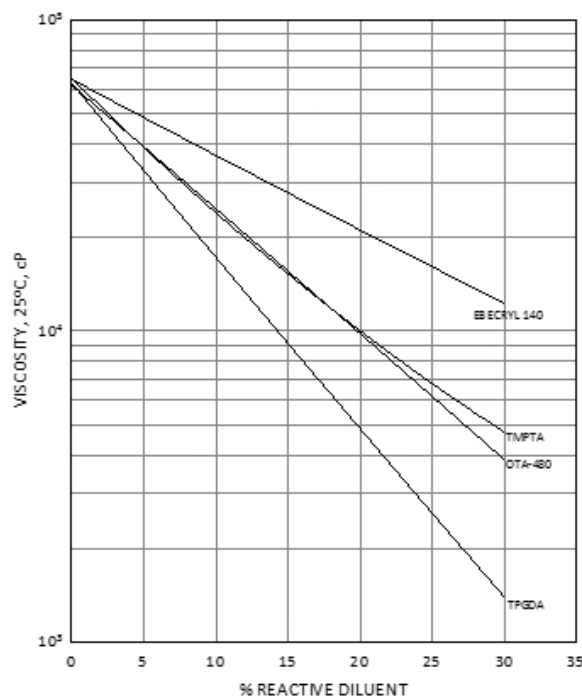
Density, g/cm ³ at 25°C	1.14
Functionality, theoretical	3
Viscosity, 25°C, mPa.s	~64000

TYPICAL CURED PROPERTIES

Tensile strength, psi (MPa)	4000 (34)
Elongation at break, %	1
Glass transition temperature, °C	70

GRAPH I

EBECRYL® 875 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



VISCOSITY REDUCTION

Graph I show the viscosity reduction of EBECRYL® 875 with the reactive diluents EBECRYL® 140⁽¹⁾ (ditrimethylolpropane tetraacrylate), OTA-480⁽¹⁾ (propoxylated glycerol triacrylate), TMPTA⁽¹⁾ (trimethylolpropane triacrylate) and TPGDA⁽¹⁾ (tripropylene glycol diacrylate). 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 avoiding solvent emissions. The specific reactive diluents used will influence performance properties such as hardness and flexibility.

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PRECAUTIONS

Before using EBECRYL® 875, 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. This material should not be stored for more than 2 years.

See the SDS for the recommended storage temperature range for EBECRYL® 875.