TECHNICAL DATASHEET

EBECRYL® 745

Diluted Acrylic Polymer

March 2017

EBECRYL® UV/EB Energy Curable Resins

INTRODUCTION

EBECRYL 745 is an acrylic polymer diluted 46% by weight with a 1/1 ratio of the reactive diluents 1,6-hexanediol diacrylate (HDDA)[(1)] and tripropylene glycol diacrylate (TPGDA)[(1)]. EBECRYL 745 is used as the primary or modifying oligomer in ultraviolet light (UV) or electron beam (EB) curable formulations to increase adhesion on difficult substrates.

PERFORMANCE HIGHLIGHTS

EBECRYL 745 is characterized by:

- Moderate viscosity
- Light color

UV cured products containing EBECRYL 745 are characterized by the following performance properties:

- Adhesion to difficult substrates
- Flexibility

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/EB curable products containing EBECRYL 745 may be applied via direct or reverse roll, offset gravure, metering rod, slot die, knife over roll, air knife, curtain and immersion coating methods, as well as screen printing. EBECRYL 745 is recommended for:

- Silk screen inks
- Coatings on plastics
- Adhesives and inks for difficult substrates, such as untreated polyester, polypropylene, polystyrene, etc.

SPECIFICATIONS	VALUE
Color, Gardner scale, max.	3
Appearance	Clear liquid
Acid value, mg KOH/g, max.	1
Viscosity, 25°C, cP/mPa·s	15000-25000

TYPICAL PHYSICAL PROPERTIES

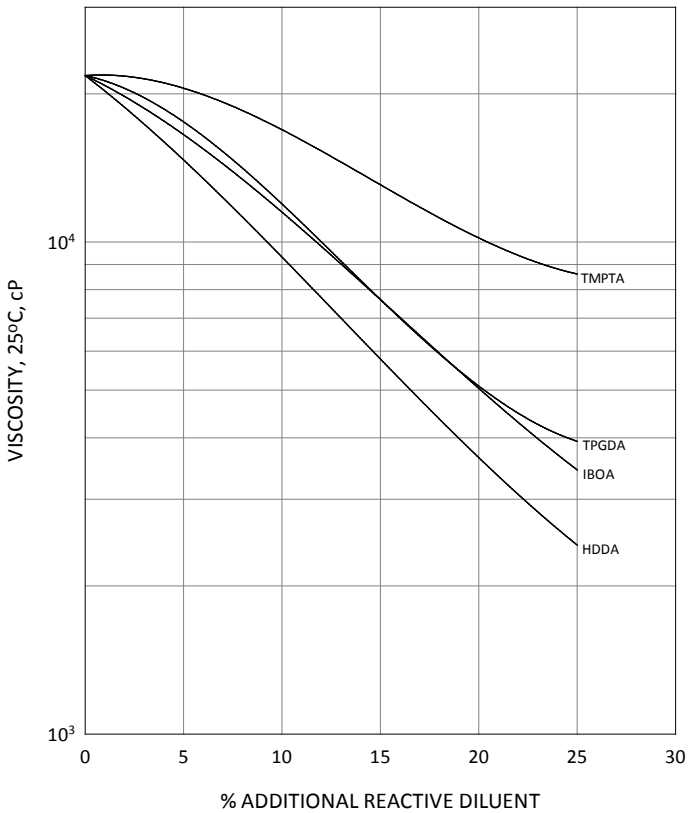
Density, g/ml at 25°C	1.05
Oligomer, % by weight	54
TPGDA, % by weight	23
HDDA, % by weight	23

TYPICAL CURED PROPERTIES[(2)]

Tensile strength, psi (MPa)	1900 (13)
Elongation at break, %	52
Glass transition temperature, °C[(3)]	30

GRAPH I

EBECRYL 745 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



(1) Product of allnex
(2) UV cured 125 µ thick films.
(3) Determined by Dynamic Mechanical Analysis.

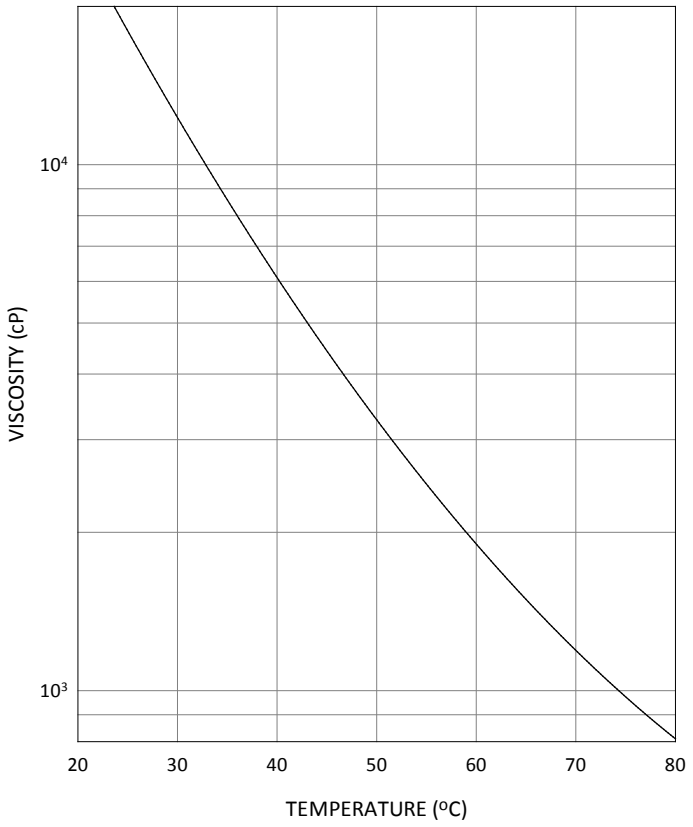
VISCOSITY REDUCTION

Graph I shows the viscosity reduction of EBECRYL 745 with 1,6-hexanediol diacrylate (HDDA), isobornyl acrylate (IBOA)(1), trimethylolpropane triacrylate (TMPTA)(1), 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 745 with increasing temperature.

GRAPH II

EBECRYL 745 - VISCOSITY VS. TEMPERATURE



PRECAUTIONS

Before using EBECRYL 745, 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 745.

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

www.allnex.com