TECHNICAL DATASHEET

EBECRYL® 809

Modified Polyester Acrylate

March 2017

EBECRYL® UV/EB Energy Curable Resins

INTRODUCTION

EBECRYL 809 is a modified polyester acrylate designed to exhibit greater flexibility and impact resistance than typical polyester acrylates. Films of EBECRYL 809 cured by ultraviolet light (UV) or electron beam (EB) provide good flexibility, high gloss, toughness and surface hardness.

PERFORMANCE HIGHLIGHTS

EBECRYL 809 is characterized by:

- Moderate viscosity
- Light color
- Good UV/EB cure response

UV/EB cured products based on EBECRYL 809 are characterized by the following performance properties:

- Good flexibility
- Surface hardness
- High gloss
- Toughness

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 809 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 offset and screen printing. EBECRYL 809 is recommended for use in:

- Clear coatings for paper, wood, flexible and rigid plastics
- Wood sealers
- Topcoats for wood
- Metal decorating vehicles
- Adhesives for paper or film lamination

SPECIFICATIONS	VALUE
Acid value, mg KOH/g, max.	10
Appearance	Clear liquid
Color, Gardner scale, max.	3
Viscosity, 60°C, cP/mPa·s	1000-1600

TYPICAL PHYSICAL PROPERTIES

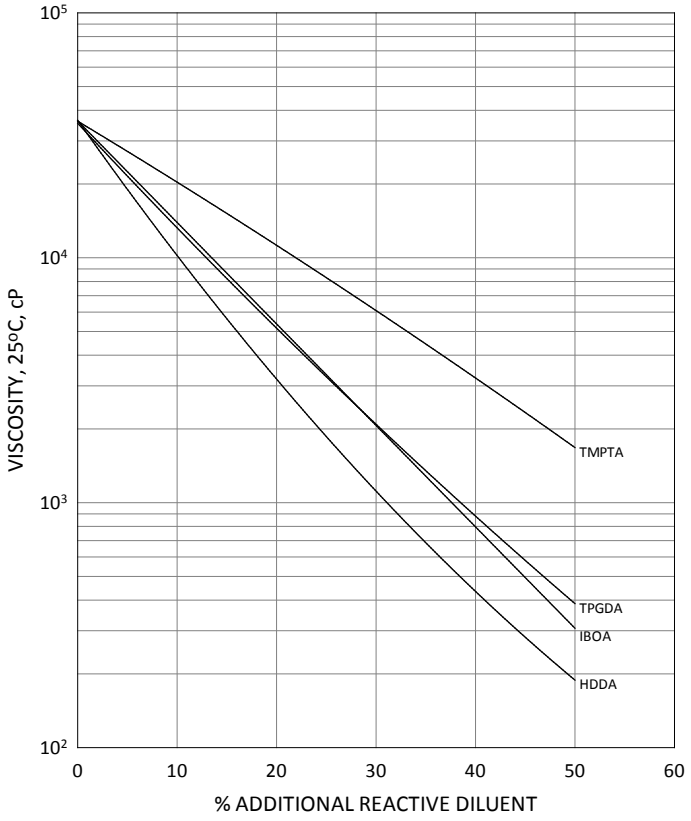
Density, g/ml at 25°C	1.14
Functionality, theoretical(1)	3.5
Oligomer, % by weight	>95

TYPICAL CURED PROPERTIES(2)

Tensile strength, psi (MPa)	3500 (24)
Tensile elongation, %	18
Glass transition temperature,°C(3)	54

GRAPH I

EBECRYL 809 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



(1) Theoretical determination based on the undiluted oligomer.
(2) UV cured 125 µ thick films.
(3) Determined by Dynamic Mechanical Analysis

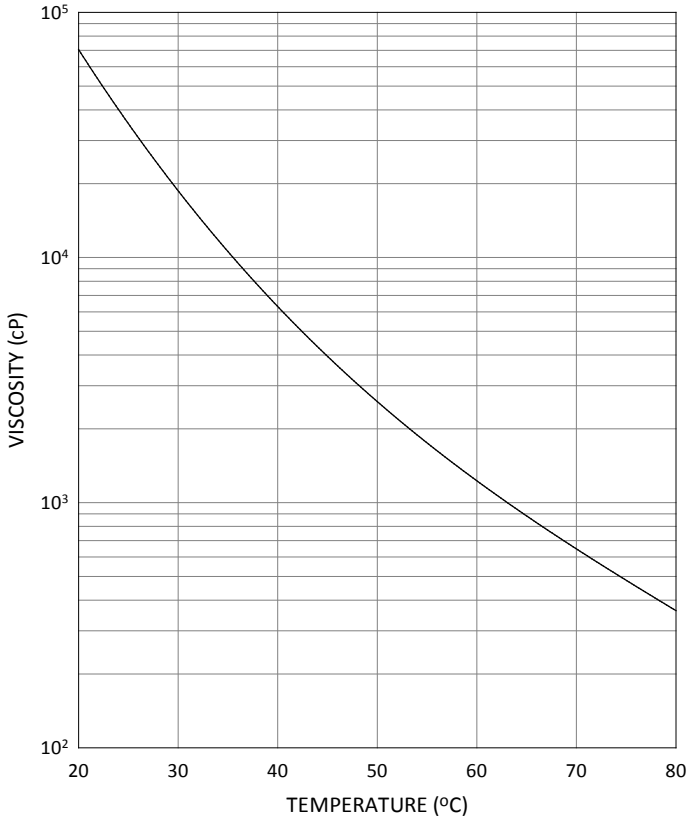
VISCOSITY REDUCTION

Graph I shows the viscosity reduction of EBECRYL 809 with 1,6-hexanediol diacrylate (HDDA)[(1)], isobornyl acrylate (IBOA)[(1)], 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, 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 809 with increasing temperature.

GRAPH II

EBECRYL 809 - VISCOSITY VS. TEMPERATURE



PRECAUTIONS

Before using EBECRYL 809, 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 809.

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