EBECRYL® 3708

Technical Datasheet

MODIFIED BISPHENOL A EPOXY DIACRYLATE

INTRODUCTION

EBECRYL® 3708 is a modified bisphenol A epoxy diacrylate that exhibits relatively low viscosity and good cure response. Films of EBECRYL® 3708 cured by ultra-violet light (UV) or electron beam (EB) demonstrate good flexibility, high gloss, toughness and superior impact resistance.

PERFORMANCE HIGHLIGHTS

EBECRYL® 3708 is characterized by :

- Good UV/EB cure response

UV/EB cured products based on EBECRYL® 3708 are characterized by the following performance properties :

- Good flexibility
- Good chemical resistance
- High gloss
- Toughness
- High impact resistance

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

SUGGESTED APPLICATIONS

Formulated UV/EB curable products containing Formulated UV/EB curable products containing EBECRYL® 3708 may be applied via gravure, direct or reverse roll, curtain coating methods, as well as offset, flexo and screen printing.

EBECRYL® 3708 is recommended for use in :

- Clear coatings for paper, wood, and flexible and rigid plastics
- Topcoats for wood
- Metal decorating vehicles
- Adhesives for paper or film lamination
- Lithographic, flexo and screen inks

TYPICAL VALUES

Acid value, mg KOH/g	max. 3
Appearance	Clear liquid

PHYSICAL PROPERTIES

Colour, Gardner	< 4
Density, g/cm³ at 25°C	1.16
Functionality, theoretical	2
Oligomer, % by weight	100
Viscosity at 60°C, mPa.s	3500

TYPICAL CURED PROPERTIES

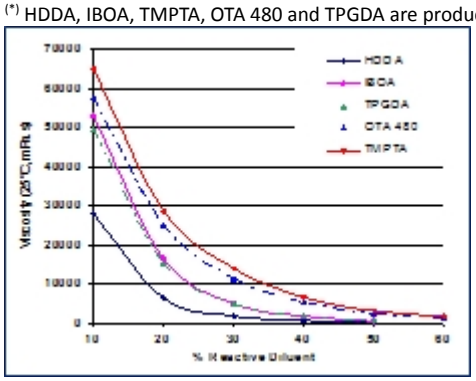
Tensile strength, MPa	4
Elongation at break, %	86
Young modulus, MPa	22
Tg (DMA), °C	24

VISCOSITY REDUCTION

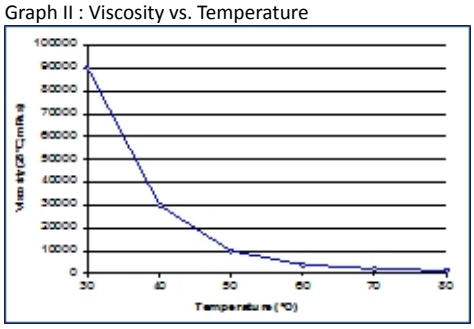
Graph I shows the viscosity reduction of EBECRYL® 3708 with 1,6-hexanediol diacrylate (HDDA)(*), isobornyl acrylate (IBOA)(*), trimethylolpropane triacrylate (TMPTA)(*), OTA 480(*) and tripropylene glycol diacrylate (TPGDA)(*). Although viscosity reduction can be achieved with non-reactive solvents, 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 avoiding 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® 3708 with increasing temperature.

(*) HDDA, IBOA, TMPTA, OTA 480 and TPGDA are produced by allnex.



Graph II : Viscosity vs. Temperature



STORAGE AND HANDLING

Before using EBECRYL® 3708, consult the Safety Data Sheet for additional information on hazards, handling procedures, and recommended protective equipment.
The maximum recommended storage temperature for EBECRYL® 3708 is 38°C. High temperature and fire conditions can cause uncontrolled polymerization with rapid evolution of heat and pressure rise, which may result in violent rupture of the storage tanks or containers. Never store in direct sunlight or adjacent to heated compartments.
Containers should be kept closed and away from oxidizing agents, acids, alkalies, peroxides, free radical initiators, photosensitizers, rust, and x-ray or ultraviolet radiation. Procedures that displace oxygen from the material, such as sparging with nitrogen, should be avoided. This material should not be stored for more than 2 years.

PRECAUTIONS

Avoid contact with skin and eyes and breathing vapours. Contains materials that may cause irritation to the eyes and skin. Sensitization may occur. Skin irritation may not occur immediately and contact may go unnoticed for up to 48 hours. Solvents should not be used to clean skin because of increased penetration potential. Contaminated clothing, shoes, belts and other leather goods should be removed immediately.
Incinerate contaminated leather goods, including shoes. Wash contaminated clothing thoroughly before reuse.
See Safety Data Sheet for emergency and first aid procedures.

STATUTORY LABELING

For Statutory Labeling information, please refer to Safety Data Sheet.