

URETHANE ACRYLATE OLIGOMER

INTRODUCTION

EBECRYL® 250 is an undiluted high molecular weight aliphatic urethane diacrylate resin, characterized by its light colour and lower viscosity. Films of EBECRYL® 250 cured by exposure to ultraviolet light (UV), electron beam (EB) or by means of peroxide are soft and flexible, exhibiting the inherent non-yellowing properties typical of an aliphatic urethane. This resin is most often used as an additive to improve the flexibility of finished formulations.

PERFORMANCE HIGHLIGHTS

EBECRYL® 250 is characterized by:

- Light colour
- Relative low viscosity

UV/EB cured products based on EBECRYL® 250 are characterized by the following performance properties:

- Improved flexibility
- Non-yellowing

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

SUGGESTED APPLICATIONS

Formulated UV/EB curable products containing EBECRYL® 250 may be applied by lithographic, screen, gravure, direct or reverse roll, curtain coating and manual coating methods.

EBECRYL® 250 is recommended for use in:

- Lithographic and screen inks
- Coatings for plastics and metals
- Laminating adhesives
- Flexibilizers for other UV/EB curable products
- Non-yellowing coatings

TYPICAL VALUES

Cone & Plate viscosity at 25°C, mPa.s	34000
Colour, Apha	50

PHYSICAL PROPERTIES

Density, g/cm ³	1.08
Molecular weight, theoretical	5000
Functionality, theoretical	2
Polymer solids, % by weight	100

TYPICAL CURED PROPERTIES

Young's modulus, MPa ⁽¹⁾	3,3
Tensile strength, MPa ⁽¹⁾	2,4
Tensile elongation, % ⁽¹⁾	150
Glass transition temperature, °C	- 59

⁽¹⁾ Measured on a 125 µm UV cured film.

VISCOSITY REDUCTION

EBECRYL® 250 can be diluted with reactive monomers such as 1,6-hexanediol diacrylate (HDDA)⁽²⁾ and isobornyl acrylate (IBOA)⁽²⁾, methyl methacrylate (MMA), hydroxypropyl methacrylate (HPMA) and isobornylmethacrylate (IBOMA). The specific reactive diluent(s) used will influence performance properties such as hardness and flexibility.

⁽²⁾ HDDA and IBOA are produced by allnex

STORAGE AND HANDLING

Care should be taken not to expose radiation curable products to temperatures exceeding 40°C for prolonged periods or to direct sunlight. This might cause uncontrollable polymerization of the product with generation of heat.

Storage and handling should be in stainless steel, amber glass, amber polyethylene or baked phenolic lined containers.

Do not store this material under an oxygen free atmosphere. Use dry air to displace material removed from the container. This material should not be stored for more than 2 years.

PRECAUTION

The following is a summary of the precautions to be taken when handling this product. Please refer to the Safety Data Sheet for further details.

The toxicological properties of this material have not been fully determined. Products of this type can be expected to be eye and skin irritant and have the potential to cause sensitization or other allergic responses. Appropriate precautions should be taken to avoid eye and skin contact and to avoid inhalation of the aerosols or vapours. Consult the relevant Safety Data Sheet for appropriate handling procedures and protective equipment prior to using this or any other material referred to in this bulletin.

See Safety Data Sheet for emergency and first aid procedures.

STATUTORY LABELING

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