EBECRYL® 2221

Technical Datasheet

TIN-FREE URETHANE ACRYLATE OLIGMER

INTRODUCTION

EBECRYL® 2221 is a hexafunctional aromatic urethane acrylate oligomer which provides very fast cure response when exposed to ultraviolet light (UV) or electron beam (EB). Cured films of EBECRYL® 2221 exhibit high hardness and solvent resistance.

PERFORMANCE HIGHLIGHTS

UV/EB cured products based on EBECRYL® 2221 are characterized by the following performance properties:

- Good surface hardness
- Good solvent resistance
- High gloss
- Fast cure speed

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® 2221 may be applied by lithographic, screen, gravure, direct or reverse roll, and curtain coating methods.
BECRYL® 2221 is recommended for use in:

- Wood coatings and fillers
- Lithographic inks

To improve cure speed, scratch and solvent resistance

TYPICAL VALUES

Viscosity at 25°C, mPa.s	18000 - 24000
Colour, Gardner	max. 2

PHYSICAL PROPERTIES

Density, g/cm^3	1.18
Molecular weight, theoretical	± 1200
Functionality, theoretical	6
Polymer solids, % by weight	100

TYPICAL CURED PROPERTIES

Tensile strength, MPa	21.1
Tensile elongation, %	1.2
Young Modulus, MPa	1820
Tg (by DMTA- max tg δ), °C	120

VISCOSITY REDUCTION

EBECRYL® 2221 can be diluted with reactive monomers such as EBECRYL® 40[(1)], trimethylolpropane triacrylate (TMPTA)[(1)], tripropylene glycol diacrylate (TPGDA)[(1)] and 1,6-hexanediol diacrylate (HDDA)[(1)]. The specific reactive diluent(s) used will influence performance properties such as hardness and flexibility.

[(1)] product of 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 after production date.

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.