

URETHANE ACRYLATE OLIGOMER

INTRODUCTION

EBECRYL® 204 is an aromatic urethane triacrylate oligomer diluted with 25% of 1,6-hexanediol diacrylate (HDDA) monomer. Films of EBECRYL® 204 cured by ultraviolet light (UV) or electron beam (EB) exhibit good flexibility, abrasion resistance and adhesion to various substrates in combination with a good solvent resistance.

PERFORMANCE HIGHLIGHTS

EBECRYL® 204 is characterized by:

- Light colour
- Low odour

UV/EB cured products based on EBECRYL® 204 are characterized by the following performance properties:

- Adhesion to various surfaces
- Good flexibility and toughness
- Good solvent resistance

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® 204 may be applied by lithographic, screen, gravure, direct or reverse roll, and curtain coating methods.

EBECRYL® 204 is recommended for use in:

- Coatings on rigid and flexible plastics
- Wood coatings
- Screen inks
- Low gloss coatings
- Conformal coatings

TYPICAL VALUES

Höppler viscosity at 25°C, mPa.s	17000
Colour, Gardner	max. 2

PHYSICAL PROPERTIES

Density, g/cm ³	1.12
Molecular weight, theoretical	2000
Functionality, theoretical	3
Polymer solids, % by weight	75
HDDA, % by weight	25

TYPICAL CURED PROPERTIES

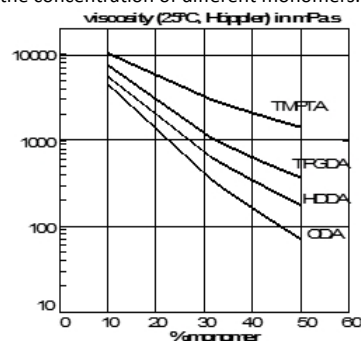
Tensile strength, MPa	67.4
Tensile elongation, %	7.5
Tensile Modulus, MPa	1315

VISCOSITY REDUCTION

EBECRYL® 204 can be diluted with reactive monomers such as trimethylolpropane triacrylate (TMPTA)⁽¹⁾, tripropylene glycol diacrylate (TPGDA)⁽¹⁾, octyl/decyl acrylate (ODA)⁽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

The graph shows the viscosity reduction of EBECRYL® 204 as a function of the concentration of different monomers.



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.

EBECRYL® 204 tends to crystallize at temperatures lower than 10°C (50°F). Crystallized EBECRYL® 204 can be thawed by placing the container in an environment warmed to a maximum of 38°C (100°F) until completely liquefied. Electrical heating bands/tapes or direct exposure to live steam should never be used for heating as these can cause uncontrolled polymerization. Periodic agitation/mixing of the EBECRYL® 204 during thawing is recommended. Crystallized EBECRYL® 204 that has been properly thawed is unaffected in quality and is suitable for use.

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.