

ALIPHATIC URETHANE ACRYLATE

INTRODUCTION

EBECRYL® 4100 is an undiluted aliphatic urethane acrylate designed for coatings on wood, cork, furniture, paper, parquet and film.

PERFORMANCE HIGHLIGHTS

UV/EB cured coatings based on EBECRYL® 4100 are characterized by the following performance properties:

- High flexibility
- Good chemical and mechanical resistance properties

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

SUGGESTED APPLICATIONS

EBECRYL® 4100 is used in formulation of UV/EB energy curable coatings for application by roller coating, spraying and curtain coating on wood, cork, furniture, paper, parquet and film.

FORMULATING

Depending on the application, the coating can be adjusted to application viscosity using standard reactive diluents such as dipropylene glycol diacrylate (DPGDA)⁽¹⁾, 1,6-hexanediol diacrylate (HDDA)⁽¹⁾, isobornyl acrylate (IBOA)⁽¹⁾ and trimethylolpropane triacrylate (TMPTA)(1) or solvents such as butyl acetate.

Also, EBECRYL® 4265 is particularly suitable for reducing the viscosity of EBECRYL® 4100. The advantage of the use of EBECRYL® 4265 for viscosity thinning is that the reduction in reactivity is lower than by using conventional reactive diluents.

Because of the many potential combinations with reactive diluents and solvents compatibility must be tested in each individual case.

UV curing of coatings formulated with EBECRYL® 4100 requires the addition of standard commercial photo initiators. Typical levels are 4 - 6%, though this may vary to meet the reactivity requirements of the application. In the case of EB curing, a low oxygen atmosphere must be ensured to avoid surface inhibition.

Lower gloss coatings can be produced using standard matting agents. Care should be taken with respect to sedimentation which may cause the coating to gel prematurely.

⁽¹⁾ product of allnex

SPECIFICATIONS

| | |
|------------------------|-------------|
| Acid number, mg KOH/g | max. 2 |
| Color, Apha | max. 150 |
| Viscosity, 23°C, mPa.s | 5500 - 9500 |

TYPICAL PHYSICAL PROPERTIES

| | |
|-----------------------|-------|
| Density, g/ml at 20°C | 1.13 |
| Flash point, °C | > 100 |
| Functionality | 3.0 |
| Hydroxyl content, % | 0.3 |

TYPICAL CURED PROPERTIES

| | |
|-----------------------------|-------------|
| Tensile strength, psi (MPa) | 2175 (15.0) |
| Elongation at break, % | 27 |
| Tg, °C | 22 |

PRECAUTIONS

Before using EBECRYL® 4100, 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® 4100.