EBECRYL® 4654

Technical Datasheet

ALIPHATIC URETHANE ACRYLATE IN BUTYL ACETATE

INTRODUCTION

EBECRYL® 4654 is an aliphatic urethane acrylate supplied at 60% solids in n-butyl acetate. Films of EBECRYL® 4654 are physically dry after evaporation of the solvent. EBECRYL® 4654 exhibits high reactivity in ultraviolet (UV) and electron beam (EB) energy curable coatings and yields hard polymers. Coatings based on EBECRYL® 4654 demonstrate good exterior durability, resistance to yellowing, and chemical and mechanical resistance properties.

PERFORMANCE HIGHLIGHTS

UV/EB cured coatings based on EBECRYL® 4654 are characterized by the following performance properties:

- Physically dry after solvent evaporation
- Good chemical and mechanical resistance properties
- High resistance to yellowing and exterior durability

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® 4654 is designed for use in the formulation of UV/EB energy curried coatings for automotive clear coats by spray application.

FORMULATING

Depending on the application, the coating can be adjusted to the appropriate 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.

The reactive diluent must be selected carefully as it may impact considerably on the properties and storage stability of the coating. 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® 4654 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.

(1) Product of allnex.

SPECIFICATIONS

Appearance	Clear liquid
Color, Pt-Co scale(2), max.	100
NCO content, %, max.	0.15
Viscosity, 25°C, mPa·s/cP	600-1400

(2) Also referred to as APHA/Hazen color.

TYPICAL PHYSICAL PROPERTIES

Acid value, mg KOH/g	1
Density, g/ml at 20°C	1.02
Flash point, °C	72
Solvent content, n-butyl acetate, %	40

PRECAUTIONS

Before using EBECRYL® 4654, 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.

EBECRYL 4654 contains a flammable or combustible liquid and vapor. Consult the SDS for additional storage and handling recommendations.

See the SDS for the recommended storage temperature range for EBECRYL® 4654.