

TIN-FREE⁽¹⁾ ALIPHATIC URETHANE ACRYLATE

⁽¹⁾ EBECRYL® 4201 does not contain intentionally added organic tin compounds

INTRODUCTION

EBECRYL® 4201 is an undiluted aliphatic urethane acrylate designed for wood coatings (cork and parquet) with a high grit feeder abrasion resistance.

PERFORMANCE HIGHLIGHTS

UV/EB cured coatings based on EBECRYL® 4201 are characterized by the following performance properties:

- High elasticity
- Good chemical and mechanical resistance properties
- Outstanding abrasion resistance, in particular according to the grit feeder method

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® 4201 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)⁽²⁾, 1,6-hexanediol diacrylate (HDDA)⁽²⁾, isobornyl acrylate (IBOA)⁽²⁾ and trimethylolpropane triacrylate (TMPTA)⁽²⁾ or solvents such as butyl acetate.

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® 4201 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.

⁽²⁾ product of allnex

SPECIFICATIONS

Appearance	Clear liquid
Color, Apha	max. 200

TYPICAL PHYSICAL PROPERTIES

Acid number, mg KOH/g	≤ 2
Flash point, °C	> 100
Functionality	4.0
Hydroxyl content, %	~0.3
Viscosity, 23°C, mPa.s	~7500

TYPICAL CURED PROPERTIES

Tensile strength, psi (MPa)	1150 (8.0)
Elongation, %	17
Young's modulus, psi (MPa)	11900 (82)
Glass transition temperature, Tg	20

PRECAUTIONS

Before using EBECRYL® 4201, 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® 4201.