

UNSATURATED POLYESTER RESIN

**INTRODUCTION**

EBECRYL® 4381 is an unsaturated polyester resin diluted in 30% dipropylene glycol diacrylate (DPGDA). Coatings based on EBECRYL® 4381 are characterized by good hardness and high gloss.

**SUGGESTED APPLICATIONS**

EBECRYL® 4381 is designed for use in the formulation of UV/EB energy curable coatings and primers for application by roller coating, spraying and curtain coating on wood, cork and furniture.

Formulations based on EBECRYL® 4381 are recommended for:

- UV/EB cured roller coated wood primers and coatings

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.

**FORMULATING**

Coatings can be adjusted to appropriate viscosity for the application with additional DPGDA or the addition of other standard reactive diluents such as dipropylene glycol diacrylate (DPGDA)<sup>(1)</sup>, isobornyl acrylate (IBOA)<sup>(1)</sup>, and trimethylolpropane triacrylate (TMPTA)<sup>(1)</sup> or solvents such as butyl acetate.

EBECRYL® 4381 is compatible with most acrylate monomers and oligomers. 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® 4381 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. Unmodified EBECRYL® 4381 yields hard, glossy films. Lower gloss coatings can be produced using silica matting agents such as the SYLOID® ED grades (Grace).

<sup>(1)</sup> Product of allnex

**SOLUBILITY**

Toluene, Xylene	Partly soluble
Aliphatic hydrocarbons	Insoluble
Alcohols	Partly soluble
Esters	Soluble
Ketones	Soluble

**TYPICAL PHYSICAL PROPERTIES**

Acid value, mg KOH/g	14
Color, Gardner	3
Density, g/cm <sup>3</sup> at 20°C	1.15
DPGDA content, %	30
Flash point, °C	> 100
Viscosity, 23°C, mPa.s	12000

**TYPICAL CURED PROPERTIES**

Tensile strength, psi (MPa)	1885 (13)
Elongation at break, %	12

**PRECAUTIONS**

Before using EBECRYL® 4381, 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**

EBECRYL® 4381 can become (partially) crystalline during storage at temperatures below 10°C. Crystallization does not impact the quality of the product. Before use the material should be fully liquified by heating for 48 hours at 60°C. Recommended storage temperature to avoid solidification: 10°C to 40°C.

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.

**STATUTORY LABELING**

For Statutory Labeling information, please refer to Safety Data Sheet.