EBECRYL® 8110

Energy Curable Specialty Resin for Easy-to-Clean Surface Effect

INTRODUCTION

EBECRYL® 8110 is a novel and patented energy curable specialty resin developed to enhance coatings with long lasting easy-to-clean (E2C) surface property. Coatings based on EBECRYL® 8110 cured by ultraviolet light (UV) or electron beam (EB) exhibit oil and water repellent effect (high contact angle) and easy removal of fingerprints, oils, dust and other contaminants from coatings surfaces.

PERFORMANCE HIGHLIGHTS

UV/EB cured coatings containing approx. 25 % EBECRYL® 8110 (recommended concentration) are characterized by the following performance properties:

- Easy-to-clean fingerprint without smudge,
- Outstanding resistance to mechanical wear,
- Unique long lasting E2C surface effect,
- Oil and water repellent – low surface energy,
- Excellent chemical resistance, and
- Resistance to permanent oil markers & inks.

Other coating properties will depend on the selection of other formulation components, such as oligomers, reactive diluents, photoinitiators and other additives as well as on curing conditions.

SUGGESTED APPLICATIONS

Formulated UV/EB curable products containing EBECRYL® 8110 may be applied via direct or reverse roll, offset gravure, metering rod/barcoater, slot die, knife over roll, air knife, curtain, immersion, spray, roll to roll and spin coating methods, as well as screen printing.

EBECRYL® 8110 is recommended for use in:
- Consumer Electronics (casing & display),
- Optical Film,
- Display Partitions & Color Resist,
- Luxury Packaging,
- Consumer Goods, and
- High Gloss & Metallic Finishes.

PHYSICAL PROPERTIES

(C&P) viscosity at 25°C, mPa.s:	1630
Aspect:	Clear to slightly hazy
Density, g/cm^3 :	1.176
Solids (% by weight):	100

FORMULATION GUIDELINES

The formulated coating containing EBECRYL® 8110 could show some slight haziness which will disappear when applying and curing. In case the cured coating containing EBECRYL® 8110 shows some haziness, it is recommended to adjust the EBECRYL® 8110 content and/or to add EBECRYL® 145 (propoxylated neopentyl glycol diacrylate difunctional monomer) to the formulation.

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EXEMPLATIVE E2C UV HARDCOAT FORMULATION FEATURING EBECRYL® 8110

Ingredient	parts
EBECRYL® 8301R*	15
EBECRYL® 8110	25
TMPTA	20
PETIA	40
Esacure™ KS 300	4

*equivalents of EBECRYL® 8301R are EBECRYL® 1290N (available in Asia Pacific) or EBECRYL® 1290 (available in Europe)

This formulation was applied at 10 g/m² on a 250 µ polycarbonate sheet and cured with 3 J/cm² energy dosis. Cured coating gave the following (advancing) contact angles (average ± standard deviation):

- Deionized water = (111.4 ± 0.2) °
- n-Hexadecane = (68.8 ± 0.9) °

The high contact angle values confirm the high hydrophobicity and oleophobicity of the cured coating. The same coating allows a fingerprint to be removed with 2 dry wipes.

STORAGE AND HANDLING

Care should be taken not to expose energy 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.
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 12 months.

PRECAUTIONS

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 LABELLING

Please refer to the Safety Data Sheet.

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