TECHNICAL DATASHEET

UCECOAT® 7200

Waterborne Urethane Acrylate for Hardcoat Applications

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UCECOAT® Waterborne UV/EB Energy Curable Resins

INTRODUCTION

UCECOAT 7200 is a novel[1] energy curable solvent-free urethane acrylate in water developed for hardcoat applications. This urethane acrylate is highly reactive upon cure and exhibits high scratch and abrasion resistance after curing. Due to its low viscosity, it can be used as the main binder in waterborne hardcoat formulations for spray or curtain coater. UCECOAT 7200 can be blended with other waterborne UV resins (after pH neutralization) to increase solids content and/or hardness property.

PERFORMANCE HIGHLIGHTS

UCECOAT 7200 is characterized by:

- Low viscosity
- White appearance

UV/EB cured coatings based on UCECOAT 7200 are characterized by the following performance properties:

- High solids content
- Very high reactivity
- Very high hardness and scratch resistance
- Excellent stain resistance
- Direct adhesion to various plastic substrates

The actual properties of UV/EB cured products also depend on the selection of other formulation components, such as additives and photoinitiators, as well as curing conditions.

SUGGESTED APPLICATIONS

Formulated UV/EB curable products containing UCECOAT 7200 are typically applied by spray, spin coating, dip coating, curtain coating and common roll-to-roll coating processes. Additional methods may also be used.

UCECOAT 7200 is recommended for use in energy cured protective hardcoats for:

- Consumer electronics (casing & display)
- Optical film
- Metallized plastics

SPECIFICATIONS	VALUE
Appearance	White
Non-Volatile Matter, %	63.5-66.5
pH	3.0-5.0
Particle size, nm	300-500
Viscosity, 25°C, cP/mPa·s, max.	700

TYPICAL PROPERTIES

Density, g/ml at 25°C	1.10

SPF[2] FOR SPRAY APPLICATION

COMPONENT	Parts
UCECOAT 7200	100.0
Esacure® HB[3]	2.0
Deionized water	20.0
Tego® Wet 265[4]	2.0
ADDITOL® VXW 6386[5]	0.5
COATING PROPERTIES	
Solids, %	54
Viscosity, DIN cup 4, 23°C, seconds	16

FORMULATION GUIDLINES

It is always recommended to stir UCECOAT 7200 prior to use. After prolonged storage, the product can settle and may require agitation to redisperse. UCECOAT 7200 can be further diluted with water. Further formulation with additives and/or blending with other waterborne UV resins may require to adjust the pH of UCECOAT 7200 (before formulation) to neutrality by addition of a solution of sodium hydroxide or of an amine solution like triethylamine or Advantex®[6].

If necessary, the coating appearance can benefit from the addition of an anti-crater and wetting agent such as Tego Twin 4100[7], typically added at a concentration of 0.5 % in the wet formulation.

(1) Patent pending
(2) Starting point formulation
(3) Photoinitiator; product of Lamberti
(4) Flow & wetting aid; product Evonik
(5) Defoamer, product of allnex
(6) Amine additive; product of Taminco
(7) Product of Evonik

PRECAUTIONS

Before using UCECOAT 7200, see the Safety Data Sheet for information on the identified hazards of the material and the recommended personal protective equipment and procedures.

STORAGE AND HANDLING

Protect the product from freezing. Care should be taken not to expose the product to high temperature conditions or direct sunlight. Containers should be kept closed and away from materials that react with water. Bacteriological contamination can occur if the product is stored for an extended period in a container which is not sufficiently sealed or clean. Storage and handling should be in stainless steel, amber glass, or amber polyethylene containers. After prolonged storage product can settle and may require agitation to re-disperse. This product is stable under normal conditions of handling and storage. Do not store this material under an oxygen free atmosphere. Wash thoroughly after handling. Use with adequate ventilation.

See the SDS for the recommended storage temperature range for UCECOAT 7200.

Please refer to the allnex Guide to Safety and Handling of Acrylate Oligomers and Monomers for additional information on the safe handling of acrylates.

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