

UCECOAT[®] 7699

Technical Data Sheet

High-performance radiation curable polyurethane dispersion

INTRODUCTION

UCECOAT[®] 7699 is a solvent-free, radiation curable polyurethane dispersion. It is tack-free before cure and after water evaporation.

It has been developed for high end wooden furniture top-coats, especially pigmented, but can also be used for clear coatings and for other applications and substrates.

This polyurethane dispersion is very reactive and the cured coating exhibits outstanding scratch and stain resistance also in thick pigmented layers. Due to the low viscosity, it can be easily applied by spray or curtain coater. For roller coater applications, the product needs to be thickened.

PERFORMANCE HIGHLIGHTS

UCECOAT[®] 7699 is characterized by:

- translucent to white appearance.
- low viscosity.
- tack-free behaviour after water evaporation and before UV curing.
- very high reactivity both in both clear and pigmented systems.
- excellent stability.
- good compatibility and easy to formulate.

UV/EB cured formulations based on UCECOAT[®] 7699 are characterized by the following performance properties :

- outstanding hardness and scratch resistance (nail, pencil, coin)
- excellent stain resistance.

The final properties of UV cured formulations also depend on the selection of the other components such as additives and photoinitiators.

SUGGESTED APPLICATIONS

Formulated UV curable products containing UCECOAT[®] 7699 may be applied by spray and curtain coating methods.

UCECOAT[®] 7699 is recommended for use in :

- pigmented coatings on furniture
- clear topcoats for wooden furniture
- hard coatings on melamine paper foils and plastic substrates.
- clear coating on PVC floorings

TYPICAL VALUES

Brookfield viscosity at 25°C, (mPa.s): max. 200
Appearance: translucent to white liquid

PHYSICAL PROPERTIES

Density, g/cm³ : approx. 1.0
pH : 7-8.5
Particle size, nm : < 150
Polymer solids, by weight : approx. 35%
MFFT : 6°C

Persoz pendulum hardness before UV curing : 135 seconds

Persoz pendulum hardness after UV curing : 360 seconds



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STORAGE AND HANDLING

Care should be taken not to expose radiation curable products to temperatures exceeding 40°C for prolonged periods or to direct sunlight. This might cause the destabilisation of the dispersion or the uncontrolled polymerization of the product with generation of heat.

Due to presence of water, UCECOAT[®] 7699 needs to be stored above freezing temperatures.

The formulated product should be handled and stored 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 6 months.

PRECAUTIONS

The toxicological properties of this material have not been fully determined. 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 also for emergency and first aid procedures.

STATUTORY LABELLING

Please refer to Safety Data Sheet.

Suggested starting point formulation for an orange top-coat :

85 parts :

100	UCECOAT [®] 7699	(1)
1.5	ACEMAT [®] TS 100	(2)
3	AQUAMAT [®] 208	(2)
1	ADDITOL [®] BCPK	(1)
0.5	IRGACURE [®] 819 DW	(3)
0.05	BYK [®] 028	(4)
1	UCECOAT [®] 8460 (50% in water)	(1)

15 parts :

Orange pigment paste

Suggested additives:

Defoamers :

BYK [®] 028	(4)
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Flow and levelling : silicone free

ADDITOL [®] VXW 6396	(1)
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Rheology and flow modifier :

UCECOAT [®] 8460	(1)
UCECOAT [®] 8488	(1)

Matting agents:

SYLOID [®] 7000	(2)
SYLOID [®] C 807	(2)
ACEMAT [®] TS 100 / 3300	(2)

Wax dispersion or water repellent agents:

AQUACER [®] 535	(4)
AQUAMAT [®] 208	(4)

Photoinitiators

IRGACURE [®] 819 DW	(3)
ADDITOL [®] BCPK	(1)

- (1) Cytec
- (2) Evonik
- (3) Ciba
- (4) Altana

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