

ACRYLATED POLYURETHANE DISPERSION

INTRODUCTION

UCECOAT® 7892 is a high performance acrylated polyurethane dispersion in water specifically developed for UV curable field applied matte wood and VCT (vinyl composition tile) floor coatings. It contains a dye indicator to provide visible evidence that the floor coating is properly cured, and to visibly demonstrate differences in coating thickness. UCECOAT® 7892 allows for the development of low gloss formulations without the use of silicas or other particles. This results in formulations with better shelf life, since the settling of particles is no longer a concern. If very low gloss formulations are desired, silica can be used at very low levels to achieve this. The very low level of silica also translates into better formulation stability. Floor coatings based on UCECOAT® 7892 exhibit a good balance of flexibility and hardness, thus providing good adhesion and coin scuff. Excellent solvent and chemical resistance are also provided through use of UCECOAT® 7892.

PERFORMANCE HIGHLIGHTS

- Visible control between cured and non-cured areas
- Ease of application of homogeneous coatings
- Shortened job completion times
- Elimination of non-cured areas
- Excellent appearance in matte coatings
- Superior stability of matte formulations
- Excellent solvent and chemical resistance
- Tack-free after water evaporation

The actual properties of UV cured products also depend on the selection of the other formulation components, such as additives and photo initiators.

SUGGESTED APPLICATIONS

UCECOAT® 7892 is recommended for use in UV curable field applied floor coatings.

STARTING POINT FORMULATION

Component	Parts by weight
UCECOAT® 7892	100
Defoamers	0.3 – 0.5
Flow/leveling agents	0.1 - 0.5
Waxes	2 - 3
Silicas	0 - 2
Photo initiators	2

Viscosity (DIN Cup 4) 20 – 30 seconds

- Coat at 75 - 150 µm (3 - 6 mils) with a T-bar or roller applicator on wood or VCT; allow to dry
- Cure at 425 - 600 mJ/cm²

SPECIFICATIONS

Appearance	Opaque blue
Non-volatile matter, %	31.0 - 33.0
pH	6.5 - 8.5

TYPICAL PROPERTIES

Density, g/ml at 25°C	1.02
MFFT, °C	~0
Particle size, nm	< 120
Viscosity, 25°C, mPa.s	< 200

PROPERTIES OF STARTING POINT FORMULATION

PROPERTY	THREE COATS ON OAK/BEECH			
	50-80	15-20	9-12	3-5
Coating gloss (60°)				
Crosscut Adhesion (610 tape)	5B	5B	5B	5B
Hamberger Planer (automated coin test; Newtons)	25	20	15	15
Pencil Hardness (Erichsen; Newtons)	15	12	5	6
MEK Double Rubs	200+	200+	200+	200+
Chemical resistance (24 hour spot test, with cotton ball, covered)				
Mustard	No stain or distortion			
Eosine (red dye) 2%	No stain or distortion			
Red Wine	No stain or distortion			
Coffee	No stain or distortion			
Ammonia 1%	No stain or distortion			
Ammonia 10%	No stain or distortion			
Water	No stain or distortion			
Ethanol 50%	No stain or distortion			

WOOD COATING CONSTRUCTION

1. Sand the wood panel with P240 sandpaper.
2. Apply first coat at 90 µm (3.6 mils) wet, and air dry to < 6% moisture content.
3. Apply second coat at 55 µm (2.2 mils) wet, air dry to < 6% moisture content, and cure at 25 fpm (400-500 mJ/cm²).
4. Sand the wood panel with P240 sand paper.
5. Apply third coat at 50 µm (2.2 mils) wet, air dry to < 6% moisture content, and cure at 20 fpm (500-600 mJ/cm²).

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® 7892.

PRECAUTIONS

Before using UCECOAT® 7892, see the Safety Data Sheet for information on the identified hazards of the material and the recommended personal protective equipment and procedures.