

SilFORT™ UVHC7300 Clear Coat

Description

SilFORT™ UVHC7300 clear coat is a non-weatherable, solvent-based, UV radiation cured coating, used to protect plastic substrates from scratching and chemical substances. With its high pencil hardness, steel wool and mar-resistance, it offers exceptional protection to sheet or film materials, particularly those made from PC, PET, TAC or PMMA. SilFORT UVHC7300 clear coat can be cured at low UV-cure dosage and typically exhibits low “curl” after cure.

Key Features and Typical Benefits

- Excellent abrasion, scratch and mar resistance
- Low “curl” after cure
- Low cure shrinkage
- Solvent/chemical resistance
- Easy-to-clean surface
- Optical clarity
- Easy processing
- Low UV-cure dosage

Potential Applications

- Sheet and film coating
- Automotive interior components

Typical Physical Properties ⁽¹⁾

Property	Unit	Typical Value
Physical form	-	Liquid
Appearance	-	Clear, slightly yellow
Solids content	% by weight	Approx. 60
Dynamic viscosity (@ 25°C)	mPa*s	Approx. 40
Density (@ 25°C)	g/cm ³	Approx. 1.16
Shelf life ⁽²⁾	Months	24

(1) Typical properties are average data and are not to be used as or to develop specifications.

(2) From date of manufacture

General Considerations for Use

Application method	Spray, flow, dip, roller coating, digital printing
Reducing solvents	1-Methoxy-2-propanol (CAS#107-98-2) Methyl-isobutyl-ketone (CAS#108-10-1) 2-Butanol (CAS#78-92-2) 2-Propanol (CAS#67-63-0) ⁽³⁾
Relative humidity (application and ambient flash off)	Max. 65%
Room temperature flash off	20 – 30°C for 1 – 3 minutes
Pre-heating	1 - 3 minutes to reach 60 - 90°C ^{(4), (5)}
Intermediate cool down	Optional
Typical UV-cure	0.5 – 1.5 J/cm ² UV-A ^{(6), (7)}
Recommended hardcoat thickness	> 5 µm ^{(8), (9)}
Recommended thickness of interpenetrating layer	> 1 µm (only required for Polycarbonate) ^{(8), (9)}

(3) Other suitable solvents may be considered

(4) Part surface temperature. Longer pre-heating times may be required when using convection heating instead of IR-heating

(5) Higher heat resistant polymers may require higher pre-heat temperatures

(6) Use of un-doped, medium pressure mercury arc lamps or microwave powered Hg lamps with > 80 W/cm power is recommended. Typical UV- irradiance is 0.2 to 0.6 W/cm² UV-A irradiance

(7) EIT Inc. Power Puck II Device

(8) Interferometrical measurement. FFT-methodology. Refractive Index n = 1.5

(9) Depending on specific customer test requirements

For best results in applying clear coat, filter the coating solution by combining a 5 µm

pre-filter, followed by a 1 µm absolute gel filter.

To help ensure adequate UV-cure, work with the UV-lamp supplier to select UV-reflectors that are appropriate for the parts to be treated. Do not expose liquid product to any source of visible white light prior to UV-cure. To avoid exposure when white light is present, do not use semi-transparent pipework.

Packaging

Currently available in:

20 kg Steel drum with inner surface epoxy-phenolic resin coating

Patent Status

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Product Safety, Handling and Storage

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at www.momentive.com or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

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