Technical Data Sheet

SilFORT™ UVHC3000 clear coat

Product Description

SilFORT UVHC3000 is a clear, solvent-based, UV radiation cured coating which provides protection to parts made out of clear polycarbonate against abrasion, chemical damage, degradation caused by ultraviolet radiation and weathering. SilFORT UVHC3000 clear coat complies with the ECE automotive Regulations for European forward lighting applications and is AMECA listed for three years exposure at Florida and Arizona. With its combination of weather protection and abrasion resistance, SilFORT UVHC3000 clear coat can also be beneficial for automotive interior components.

Key Features and Typical Benefits

- Ultraviolet resistance
- Abrasion and mar resistance
- Solvent/chemical resistance
- Optical clarity
- Primerless adhesion to polycarbonate
- A single coating process step

Typical Physical Properties

Property	Unit	Typical Value
Physical Form	-	Liquid
Appearance	-	Clear, slightly yellow
Solids Content	% by weight	approx. 45
Kinematic Viscosity (at 25 °C)	cSt	approx. 9
Density (at 25 °C)	g/cm^3	approx. 1.02
Shelf Life (1)	Months	15

(1) From date of manufacturing in original unopened container. Avoid freezing.

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

Potential Applications

SilFORT UVHC3000 clear coat is a UV-, abrasion and chemically resistant coating, offering extended protection against premature deterioration of automotive forward headlight lenses. It may also be considered for use in automotive interior applications such as display covers or gear shift knobs, where a good balance between abrasion resistance, weathering and chemical protection is required. It complies with many applicable automotive OEM standards for interior and exterior components.

General Considerations for Use

Application Method	Spray, flow, dip, roller coating, ink jetting
Reducing Solvents	1-methoxy-2-propanol (CAS#107-98-2) 2-Butanol (CAS#78-92-2) 2-Propanol (CAS#67-63-0)(2)
Relative Humidity (application and ambient flash off)	Max. 65%
Room Temperature Flash Off	20 – 30 °C for 1 – 3 minutes
Pre-heating	1.5 to 6 minutes to reach 65 – 95 °C part surface temperature(3),(4)
Intermediate Cool Down	No
UV-Cure	3 – 8 J/cm2 UV-A (EIT Inc. Power Puck II Device)(5),(6)
Recommended Hardcoat Thickness(7)	8 – 16 µm
Recommended Thickness of Interpenetrating Layer(7)	>1 µm

(2) Other compatible solvents may be considered.

(3) Longer pre-heating times may be required when convection heating instead of IR-heating is being used.

(4) Modified, high heat resistant PC grades may require higher pre-heat temperatures.(5) Use of un-doped, medium pressure mercury arc lamps or microwave powered Hg lamps with > 80 W/cm power is recommended. It is suggested to have >0.2 W/cm2 UV-A irradiance.

(6) Recommended minimum cure energy for exterior applications is 3J/cm2. Some applications may require UV-dosage of up to 5J/cm2. Lower cure dosage, such as 1.5J/cm2 can still cure the product, to resist chemical exposure.

(7) Refractive Index n = 1.5.

For applications that mainly require chemical resistance, SilFORT UVHC3000 clear coat can be cured at lower UV-dosage (1.5 J/cm2) to protect the underlying substrates against solvents such as Ketones.

For best results in clear coat application, a filtration of the coating solution, combining a 5 µm pre-filter followed by a 1 µm absolute gel-filter is advised.

To ensure adequate UV-cure, it is suggested to contact the UV-lamp supplier to select suitable UV-reflectors for the parts to be treated.

Do not expose product to any source of visible white light prior to UV-cure. Special care should be taken to not use semi-transparent pipework, when white light is present.

Packaging

Currently available in:
25 kg Steel Pail with PE liner
180 kg Steel Drum with PE liner
18,2 kg Pail
181,6 kg Drum

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

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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