SilFORT™ UVHC5000K Clear Coat

Product Description

SilFORT UVHC5000K clear coat is a clear, solvent-based, UV-curing coating used on polycarbonate parts to help protect against abrasion, chemical damage and degradation caused by ultraviolet radiation and weathering. It is an excellent candidate to consider for use on headlamp lenses for forward lighting, exterior/interior trim and exterior/interior polycarbonate sheets. It complies with the ECE automotive forward lighting regulations① and is AMECA listed for five years exposure in Florida and Arizona.

Key Features and Typical Benefits

- 5-year weatherability listing
- Enhanced resistance to microcracking
- Excellent adhesion to various plastics
- Transparency
- High chemical resistance
- ECE compliant and AMECA listed
- Recoverability and re-use of overspray
- Application by spray, flow, dip and roller

Potential Applications

- Automotive forward headlight lenses
- High performance sheets and films

Typical Physical Properties

Property	Unit	Typical Value
Physical form	-	Liquid
Appearance	-	Yellow
Solids content	% by weight	approx. 55
Kinematic viscosity (@ 25°C)	cSt	approx. 20
Density (@ 25°C)	g/cm³	approx. 1.04
Shelf life②	Months	15

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

① Based on the requirements as of April 2022

② From date of manufacture, in original unopened container

General Considerations for Use

Application method	Spray, flow, dip, roller coating
Reducing solvents	1-Methoxy-2-propanol (CAS#107-98-2) 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	1.5 to 6 minutes to reach 65 – 95°C part surface Temperature ④ ⑤
Intermediate cool down	Optional
Typical UV-cure	3 – 6 J/cm² UV-A (EIT Inc. Power Puck II Device) ⑥ ⑦
Recommended hardcoat thickness ⑧	8 – 16 µm ⑨
Recommended thickness of interpenetrating layer	> 1 µm ⑩

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 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:

25 kg pail

180 kg drum

Contact Information

③ Other compatible solvents may be considered

④ Longer pre-heating times may be required when using convection heating instead of IR-heating

⑤ Modified, high heat resistant PC grades may require higher pre-heat temperatures

⑥ For applications that mainly require chemical resistance against solvents such as ketones, the product may be cured at a lower UV-dosage (1.5 J/cm²)

⑦ 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

⑧ Refractive Index n = 1.5

⑨ In areas protected from sunlight, layers of > 3 µm may achieve required abrasion & chemical resistance, as well as basic weathering protection. In cases, higher film thickness (up to 20 µm) was applied, typically no detrimental effects on coating performance of headlamp lenses were reported

⑩ Higher thickness of 2 µm up to 6 µm may further improve adhesion after harsh humidity cycles

For product prices, availability or order placement, contact customer service at Momentive.com/contact/customer-service

For literature and technical assistance, visit our website at: www.momentive.com

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