

SiIFORT™ UVHC3000K

Product Description

SiIFORT UVHC3000K clear coat is a clear, solvent-based, UV-curing coating typically 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 PC-, SAN- or PMMA-sheets. It complies with the ECE automotive forward lighting regulations¹ and is AMECA listed for three years exposure in Florida and Arizona.

Key Features and Typical Benefits

- Excellent optical clarity
- Excellent chemical resistance
- Easy-to-clean properties
- Excellent abrasion and mar resistance
- Good weathering performance

Potential Applications

- Automotive forward headlight lenses
- Automotive interior components
- High performance sheets and films

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 ²	Months	15

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

General Considerations for Use

Application Method	Spray, flow, dip, roller coating, digital inkjet printing
Reducing Solvents	<ul style="list-style-type: none"> • 1- Methoxy-2-Propanol (CAS#107-98-2) 2-Butanol (CAS#78-92-2) • 2- Propanol (CAS#67-63-0)³
Relative Humidity (Application & Ambient Flash Off)	Max. 65%

1 Based on the requirements as of December 2021

2 From date of manufacture in original, unopened container

3 Other compatible solvents may be considered

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/cm ² UV-A (EIT Inc. Power Puck II Device) ^{6 7}
Recommended Hardcoat Thickness	8 – 16 µm
Recommended Thickness of Interpenetrating Layer	>1 µm ⁸

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 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

7 For applications that mainly require chemical resistance against solvents such as ketones, SiIFORT UVHC3000K clear coat may be cured at a lower UV-dosage (1.5 J/cm²)

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

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 the product to any source of visible white light prior to UV-cure. To help avoid exposure when white light is present, do not use semi-transparent pipework.

Packaging

Currently available in:

25 kg Steel Pail with PE liner

180 kg Steel Drum with PE liner

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