

SilFORT™ AS4000 Hardcoat

Used With SilFORT SHP401 Primer

Product Description

SilFORT AS4000 hardcoat with SilFORT SHP401 primer is a clear, non-yellowing siloxane coating, which offers protection against deterioration from weather elements, such as ultraviolet rays, heat, cold, rain, snow, and ice. It also offers damage resistance from sand and dirt. It is an excellent candidate to consider for use on polycarbonate headlamp lenses. It is compliant with the ECE automotive forward lighting regulations^① and is accepted by AMECA for three years of Florida and Arizona weathering.

Key Features and Typical Benefits

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

Potential Applications

- Automotive headlamp lenses
- High performance sheets and films
- Polycarbonate glazing

Typical Physical Properties

Property	Unit	Typical Value SilFORT SHP401 Primer	Typical Value SilFORT AS4000 Hardcoat
Physical Form	–	liquid	liquid
pH	-	n/a	7
Appearance	–	amber	pale yellow
Solids Content	% by weight	approx. 2	approx. 20
Kinematic Viscosity (at 25 °C)	cSt	n/a	approx. 5.5
Density (at 25 °C)	g/cm ³	approx. 0.92	approx. 0.91
Shelf Life ^②	Months	24 (below 43°C)	15 (below 10°C)

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

Typical Processing ^③	SilFORT SHP401 Primer	SilFORT AS4000 Hardcoat
Application Method	Spray, flow, dip coating	
Reducing Solvents ^④	1-Methoxy-2-Propanol (CAS#107-98-2) Diacetonolcohol (CAS#123-42-2)	1-Butanol (CAS#71-36-3) 2-Propanol (CAS#67-63-0) 1-Methoxy-2-Propanol (CAS#107-98-2)
Relative Humidity (Application & Ambient Flash Off)	Typically 30 - 50%	Typically 30 - 50%
Room Temperature Flash Off	20 – 30 °C for 5 – 20 minutes	20 – 25 °C for 5 – 20 minutes
Cure Conditions ^⑤	No baking is required	130 °C for 30 minutes ^⑥
Recommended Layer Thickness	0.3 – 1.2 µm	4.5 – 12 µm

To ensure coating solutions free from particles, filtration of the primer and hardcoat, combining a 5 µm pre-filter, in line with a 1 µm absolute gel-filter is recommended.

Avoid mixing any portion of SilFORT AS4000 hardcoat or its reducing solvents with SilFORT SHP401 primer, as they are not compatible and precipitation of primer may occur.

Packaging

Currently available in:

- 25 kg Steel Pail with PE liner
- 180 kg Steel Drum with PE liner
- 05G-HDPE plastic pail (35.0 lbs-15.89 kg)
- 55G-Drum (400 lbs-181.6 kg)

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.

^③ Recommended typical processing conditions might be adapted due to customer specific requirements

^④ Other solvents may be considered

^⑤ Use only an indirect gas-fired or electrically heated convection oven. IR-irradiators may be used to accelerate substrate heating

^⑥ Dwell time at recommended part surface temperature

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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