

SilFORT™ AS4700-SP1 Hardcoat with SilFORT SHP470-FT2050 Primer Coat

Description

SilFORT AS4700-SP1 Hardcoat with SilFORT SHP470-FT2050 Primer Coat is a thermally cured, 2-layer coating system used principally for the protection of clear, tinted and black plastic substrates against chemicals, abrasion and weathering.

With its enhanced UV-absorber system, it offers exterior polycarbonate parts exceptional resistance against discoloration, yellowing, hazing and scratching.

While industry-known for its flow coat capability, this coating system can now also be applied by spray coating, allowing for even greater design freedom. Component curvatures, radii and orifices can now be managed in the coating process without making design compromises.

Key Features and Typical Benefits

- Improved long-term part weatherability via increased coating layer thickness uniformity
- Enhanced part design flexibility
- High transmission rate of ADAS signal frequencies, such as optical, LiDAR and radar
- High scratch and abrasion resistance
- High resistance to chemicals
- Durable, easy-to-clean, high gloss finish

Typical Physical Properties

Property ⁽¹⁾	Unit	SilFORT SHP470-FT2050 Primer Coat	SilFORT AS4700-SP1 Hardcoat
Physical Form	-	Liquid	Liquid
Color	-	Amber	Pale Orange
Solids Content	%	Approx. 9	Approx. 22.5
Density (@ 25°C)	g/cm ³	Approx. 0.95	Approx. 0.94
Kinematic Viscosity (@ 25°C)	cSt	Approx. 85	Approx. 5
Acetic Acid Content	%	n/a	4,5 – 6,5
Electrical Resistance ⁽²⁾	kOhm	approx. 40	0
Shelf Life ⁽³⁾	Months	48 (below 43°C)	10 (at <10°C)

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

(2) DIN55667 / ASTM D5682

(3) From date of manufacture

Potential Applications

- Automotive front modules for electric vehicles
- Polycarbonate exterior automotive glazing parts, e.g. sunroofs, windows
- Clear, black or dark tinted automotive exterior trim
- Forward headlight lenses
- ADAS sensor covers
- High performance polycarbonate sheet and film

General Considerations for Use

	SilFORT SHP470-FT2050 Primer Coat⁽⁴⁾	SilFORT AS4700-SP1 Hardcoat
Application Method	Spray, flow, dip	Spray, flow, dip
Reducing Solvents ⁽⁵⁾	1- Methoxy-2-Propanol (CAS#107-98-2) Diacetonealcohol (CAS#123-42-2) 2- Butanone (CAS#78-93-3) 4-Methyl-2-Pentanone (CAS#108-10-1)	1- Butanol (CAS#71-36-3) 2- Propanol (CAS#67-63-0) 1-Methoxy-2-Propanol (CAS#107-98-2) Acetic Acid (CAS#64-19-7)
Recommended Coating Thickness ⁽⁶⁾	1.2 – 4 µm ⁽⁷⁾	4 – 8 µm, maximum 12 ⁽⁷⁾

(4) To apply the primer coat properly by spray, it is necessary to dilute it with appropriate solvent(s)

(5) Other compatible solvents may be considered

(6) Interferometrical measurement FFT-methodology; nSHP470FT2050 = 1.53 / nAS4700F = 1.43

(7) System performance may vary within recommended film thickness window

SilFORT AS4700-SP1 Hardcoat, as well as some hardcoat solvents (e.g. water, acetic acid, alcohols), are not miscible with SilFORT SHP470-FT2050 Primer Coat because precipitation of the primer coat will typically occur.

Once ambient temperature has been reached, use SilFORT AS4700-SP1 Hardcoat within one week. Re-refrigeration of SilFORT AS4700-SP1 Hardcoat should be considered when not used within 24 hours.

For a particle-free part surface, processing of components in a climate-controlled cleanroom environment that complies with ISO14664-1, equal or lower class 6, is recommended.

Before applying any coating, part surface temperature should be < 35°C.

For information about the use of SilFORT AS4700-SP1 Hardcoat with primer systems other than SilFORT SHP470-FT2050 Primer Coat, please request the latest version of Momentive's processing guide or consult directly with one of our application development team members.

Packaging

SilFORT AS4700-SP1 Hardcoat is currently available in:

- 25 kg Steel pail with PE liner

SilFORT SHP470-FT2050 Primer Coat is currently available in:

- 25 kg Steel pail with PE liner
- 180 kg Steel drum with PE liner
- 900 kg IBC

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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