

SilFORT™ PHC XH100 clear coat

Description

SilFORT PHC XH100 is a thermally cured siloxane clear coat that promotes adhesion to various types and grades of transparent, colored or filled Polycarbonate (PC). It can provide an excellent abrasion and chemically resistant layer to help prevent coated articles from excessive wear while in service.

Key Features and Typical Benefits

- Good clarity
- Excellent abrasion and mar resistance
- Good solvent/chemical resistance
- Primerless adhesion to many grades of PC
- Single coating process
- Easy to clean surface

Potential Applications

SilFORT PHC XH100 clear coat can protect various types and grades of transparent, tinted, coloured or filled PC articles from chemical or mechanical damage. Potential applications include the use in highly exposed wear-and-tear items in the consumer market, like frames, sheets, trays, beakers, cups, covers or even vacuum metalized surfaces.

Typical Physical Properties

Property	Value
Solids Content, % by weight	approx. 25.5
Solvents	1-Butanol, 2-Propanol ³
Flash Point (Penske Martens, Closed Cup)	19.4 °C

Density, g/cm ³ @ 20 °C	approx. 0.93
pH	5.2
Viscosity cSt @ 25 °C	3 - 10
Gardner Colour	1 - 5
Shelf life (@ storage temperature 2 - 10 °C)	9 month from day of manufacturing

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

Tests on Transparent PC (thickness approx. 6 µm; Cure: 30 min @ 130 °C)

Taber Abrasion ¹	500 cycles	≤ 2% Δ Haze
	1000 cycles	≤ 3% Δ Haze ⁴
Water Immersion ²		≥ 240 hrs

Note: Test data. Actual results may vary.

1 Taber Abrasion Test with 500g load CS10F (Gen. IV) wheels at 500 cycles. Haze % measured per ASTM D1003. Higher haze indicates greater abrasion. Humidity during coating and Taber wheel variability will affect final values.

2 Temperature = 65 °C followed by cross hatch tape pull adhesion. Result: GT0 (according to EN ISO 2409).

3 Other solvents upon request.

4 If it is required to achieve a Taber Abrasion resistance of ≤ 2% Haze after 1000 cycles, extended cure times of ≥60 minutes may be applied.

General Considerations for Use

Refrigeration between 2 and 10 °C is required for storage of SilFORT PHC XH100 clear coat. Extended storage may be considered if the material is stored at temperatures below 2 °C.

Before use, allow the product to return to room temperature (>15°C) in original container. Then vigorously stir it to re-constitute any materials that may have separated. After air bubbles have dissipated, the solution should appear homogeneous. For adequate protection from airborne particles, the coating area should be of clean room class ±7 acc. to ISO 14644-1 and being adequately ventilated. If necessary, parts may be washed or wiped with appropriate cleaning agents followed by a proper rinsing step and an ionized-air blow-off. During usage, the coating solution should be filtered just prior to coating application methods. A

2-stage filtration to approximately 0.5 to 1.0 micron, using a 5 to 8 micron pre-filter is recommended.

Coating application methods include flow, spray, dip or spin processes.

After an ambient flash off at 20 - 30 °C @ 30 - 60% relative humidity for a minimum of 2 minutes (ideally until the applied coating is tack-free), the film should be cured using an electric or indirect gas-fired oven with good temperature distribution and air exchange rate.

The recommended minimum cure conditions are 30 minutes at ≥ 128 °C part surface temperature. Parts with higher wall thickness may require longer cure times.

Prolonged cure times, as well as higher cure temperatures, can be considered to further enhance abrasion resistance and promote other performance criteria. For an optimum performance, a dry film thickness of ≥ 6 μm is recommended.

Packaging

25 kg Steel Pail with PE liner (SAP# 109645) 180 kg Steel Drum with PE liner (SAP# 108871)

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 Material Safety Data Sheet (MSDS) 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. MSDS 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.

From automotive to healthcare, from electronics to construction, products from Momentive Performance Materials Inc. are practically everywhere you look. We are a global leader in silicones and advanced materials with a 70+ year heritage of innovation and being first to market – with performance applications that improve everyday life. By knowing our customers' needs and creating custom technology platforms for them, we provide science based solutions to help customers increase performance, solve product development issues and engineer better manufacturing processes.

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