

SILFORT* PHC587C

silicone resin solution for abrasion resistant coatings

ENGINEERED MATERIALS - HARDCOATS & WSC'S



SILFORT PHC587C premium-performance silicone resin solution, after curing, is a clear, non-yellowing silicone coating, which can help provide excellent protection against coating- and/or substrate-deterioration from weather and ultraviolet rays, especially long term cracking due to UV exposure. SILFORT PHC587C premium-performance hard coat may enable excellent productivity through primerless adhesion, coupled with curing at 130°C. SILFORT PHC 587C complies with the Economic Commission of Europe (ECE) regulation for European forward lighting applications.

Key Features and Typical Benefits

- Excellent Long Term Crack Resistance
- UV-Resistance
- Primerless Adhesion to Polycarbonate
- Abrasion- & Scratch-Resistance
- Good Transparency
- Solvent- & Chemical Resistance
- Heat Resistance
- Single-Coat-Process

Typical Physical Properties

Properties	SILFORT PHC587C Hard Coat Values
Solids Content (% by weight)	24.2 - 26.8
Solvents	1-Butanol, Isopropanol
Flash Point Pensky Martens (closed cup), °C	19.4
Density (g/cm ³) @ 25°C	0.91 - 0.94
pH	4.0 - 6.0
Kin. Viscosity (cSt) @ 25°C	3 - 12

SILFORT PHC587C Hard Coat on Polycarbonate (Film Thickness 6-8 µm)	
Taber Abrasion ⁽¹⁾	≤10% Δ Haze
Water Immersion ⁽²⁾	≥250 hrs.

(1) Taber® Abrader with 500g load, CS10F, Gen. IV abrasion wheel, 500 cycles, haze % measured acc. to ASTM D1003. Higher haze indicates higher abrasion. Humidity during coating and Taber® wheel variability will affect final results.

(2) Temperature = 65°C

Taber is a registered trademark of Taber Industries.

Typical data are average data and actual values may vary.

Typical data shall not be used as product specifications.

Chemical- / Solvent Resistance

10W30 Motor Oil	Power Steering Fluid
Ethylene Glycol Antifreeze	0.1N Sulfuric Acid
Heavy Duty Brake Fluid (Glycol)	0.1N Sodium Hydroxide
Windshield Washer Fluid	Auto Polishing Paste
Heavy Duty Detergent	Petrol or Leaded Gasoline
Diesel Fuel	Battery Acid

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General Instructions for Use

General Requirements

The coating area should be clean, dust-free (Class 10,000 or better, acc. to US fed. std. 209e or \leq class 7 acc. to ISO 14644-1), well-ventilated and with the relative humidity controlled to $40 \pm 10\%$. If necessary, parts should be washed or wiped clean with isopropyl alcohol, a mild detergent solution and clean water rinse, or ultrasonic bath followed by a filtered-air blow off and a final ionized-air blow-off. Cleanliness is critical for the production of good parts. The coating solution should be filtered continuously or just prior to use through a 1.09m absolute gel filter, using a 3 to 5 9m prefilter. electric or indirect gas-fired ovens with good temperature distribution and air exchange are recommended for cure.

Preparation From Cold Storage

Allow SILFORT PHC587C to return to room temperature in original container. When the coating reaches 15°C , gently mix it to re-constitute any material which may have separated. Solution should appear homogeneous at room temperature.

SILFORT PHC587C Hard Coat

The hard coat can be applied to parts by dip, spray or flow coating methods. For spray applications and large-part flow coating, SILFORT PHC587C hard coat can be diluted with an appropriate solvent (e.g. IPA, 1-Butanol). The coating should be applied to result in a cured film thickness of 6-8 microns or thicker, depending on the application. The coating should be allowed to dry at room temperature until tack free, for approximately 10 to 20 minutes. After the part reaches a temperature of 130°C , SILFORT PHC587C cures to an abrasion resistant hard coat in ≥ 30 minutes.

Particularly for flow coating applications, for most consistent results, it is favorable to maintain an optimal solvent and acetic acid level in the re-circulating solution.

Product Safety, Handling and Storage

The warranty period is 3 months from date of shipment from Momentive Performance Materials if stored in the original unopened container at $+4^{\circ}\text{C}$ to $+10^{\circ}\text{C}$.

Customers should review the latest Material Safety Data Sheet (MSDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, and any special storage conditions required for safety. MSDS are available at www.momentive.com or, upon request, from any Momentive Performance Materials (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.

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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.

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

Compatibility of Momentive Performance Materials hard coats and polycarbonate resins, is dependent on a number of factors including operational stresses, chemical exposure, temperature levels, impact and exposure to ultraviolet light. While it is up to the end user to determine what application specific testing is appropriate, it is suggested that all polycarbonate resin applications be tested for at least thirty (30) days for compatibility and crazing with this hard coat use. There is no dependable substitute for careful testing of prototypes of production parts in typical operating environments.

Availability

Products can be ordered from Momentive Performance Materials through any of its sales offices across the world.

16 kg Pail
180 kg Drum

Emergency Service

Momentive Performance Materials maintains an around-the-clock emergency service for its products.

<u>Location</u>	<u>Emergency Service Provider</u>	<u>Emergency Contact Number</u>
Mainland U.S., Puerto Rico	CHEMTREC	1-800-424-9300
Alaska, Hawaii	CHEMTREC	1-800-424-9300
Canada	CHEMTREC	1-800-424-9300
Europe, Israel	NCEC	+44 (0) 1235239670
Middle East	NCEC	+44 (0) 1235239671
Asia Pacific (except China)	NCEC	+44 (0) 1235239670
China	NCEC	+86-10-5100-3039
Latin America (except Brazil)	NCEC	+44 (0) 1235239670
Brazil	SOS Cotec	08000111767 or 08007071767
All other locations world wide	NCEC	+44 (0) 1235239670
At sea	Radio U.S. Coast Guard in U.S. waters NCEC in International waters	+44 (0) 1235239670

For Health related calls, contact Momentive Performance Materials at +1-518-233-2500 (English only).

DO NOT WAIT. Phone if in doubt. You will be referred to a specialist for advice.

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