

# SILFORT\* PHC587

weatherable abrasion-resistant primerless silicone hard coat

ENGINEERED MATERIALS - HARDCOATS & WSC'S



SILFORT PHC587 premium-performance hard coat is a clear, non-yellowing silicone coating that can offer optimal protection against deterioration from weather, including ultraviolet rays, heat, cold, rain, snow and ice comparable to Momentive Performance Materials SILFORT AS4000. It also resists damage from sand and dirt. Additionally, SILFORT PHC587 silicone hard coat can provide improved productivity through primerless adhesion coupled with generally faster curing at 130°C. There is no need for a primer coat with typical polycarbonate materials.

SILFORT PHC587 coated polycarbonate complies with the ECE Automotive Regulations for European forward lighting applications, and the requirements of the DOT FMVSS #108 and is in the AMECA list of Acceptable Plastics for Optical Lenses and Reflectors Used on Motor Vehicles.

### Key Features and Typical Benefits

- ultraviolet resistance
- thermal resistance
- abrasion and mar resistance
- good clarity
- solvent/chemical resistance
- primerless adhesion to polycarbonate
- single coating process step

### Typical Physical Properties

Property	SILFORT PHC587 Hard Coat Values
Solids Content, % by weight	20 ± 1
Solvent	Methanol, n-butanol, isopropanol
Flash Point Pensky Martens, Closed Cup	19.4°C (67°F)
Density, lbs/gal (g/cc)	7.6 ± 0.1 (0.911)
pH	7.5 ± 0.3
Shelf Life in original sealed container, °C (°F)	3 months at 4 - 10 (39 - 50)
Viscosity cstk @ 25°C	4 - 8
VOC, g/l	709

### SILFORT PHC587 Hard Coat on LEXAN® polycarbonate (thickness, 6-8 microns)

Taber Abrasion <sup>(1)</sup>	< 10 d% Haze
Water Immersion <sup>(2)</sup>	> 250 Hrs.

(1) Taber Abrader with 500g load CS10F 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.

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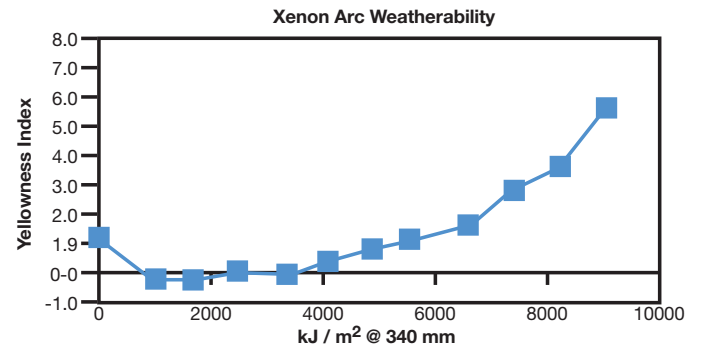
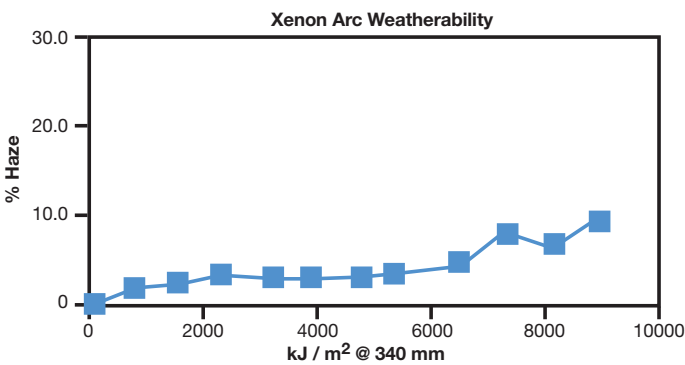
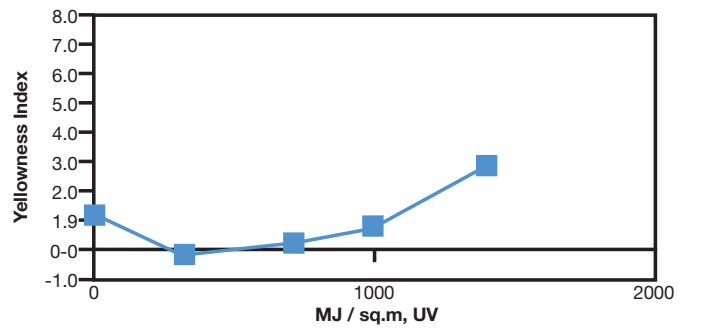
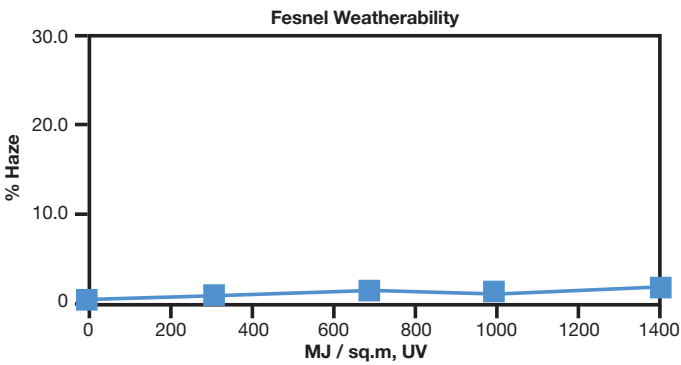
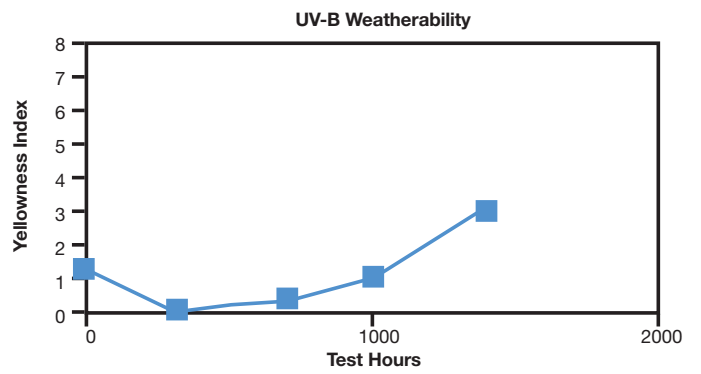
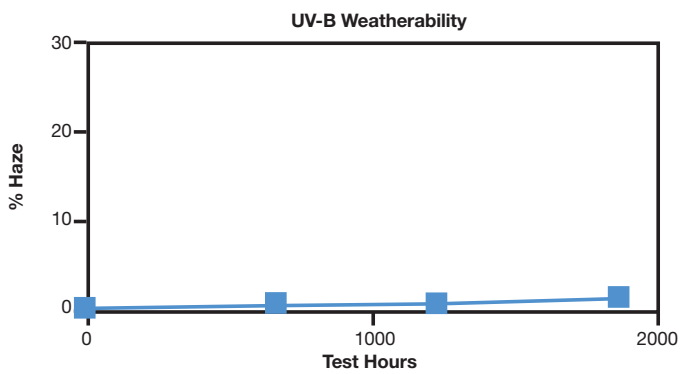
## Typical Physical Properties (continued)

### 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 Paste	Auto polish
Heavy Duty Detergent	Petrol or leaded gasoline
Diesel Fuel	Battery acid

### Weathering / Resistance

Accelerated Weathering Data	See charts. <sup>(3)</sup>
UV-B Weatherability	
Fresnel Weatherability	
Xenon Arc Weatherability	



(3) UV-B weatherability test cycle is 8 hours with FS40 lamps on at 70°C and 4 hours off with condensing humidity at 50°C. Fresnel weatherability is in Arizona U.S.A. with night time spray. Xenon Arc weatherability is per SAE J 1960.

Note: Test results. Actual results may vary.

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## General Instructions for Use

### General Requirements

Coating area should be clean, dust-free (Class 10,000 or better), well-ventilated and with the relative humidity controlled to 40 ±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 blowoff and a final ionized-air blow-off. Cleanliness is critical for the production of good parts. Coating solution should be filtered continuously or just prior to use to approximately 0.5 to 1.0 micron, using a 3 to 5 micron prefilter. Electric or indirect gas-fired ovens with good temperature distribution and air exchange are recommended.

### SilFORT PHC587 Silicone 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, the solids of the coating can be reduced with an appropriate solvent (e.g. IPA, n-butanol). Coating should be applied to result in a cured film thickness of 6-8 microns or thicker, depending on application. The coating should be allowed to dry at room temperature until tack free approximately 10 to 20 minutes. After the part reaches a temperature of 130°C (266°F) PHC 587 silicone hard coat typically cures to an abrasion resistant hard coat in 30 to 60 minutes.

### 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, and any special storage conditions required for safety. MSDS are available at [www.momentive.com](http://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.

### Caution

Compatibility of Momentive Performance Materials hard coat and polycarbonate resin, including GE LEXAN® resin, 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.

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### Limitations

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

## 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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