

## SiIFORT™ PHC587B

### SiIFORT\* PHC587B

#### Description

SiIFORT PHC587B premium-performance hard coat is a clear, non-yellowing silicone coating that provides optimal protection against deterioration from weather, including ultraviolet rays, heat, cold, rain, snow and ice comparable to Momentive Performance Materials SiIFORT AS4000. It also resists damage from sand and dirt. Additionally, SiIFORT PHC587B provides improved productivity with primerless adhesion coupled with faster curing at 130°C. There is no need for a primer coat. SiIFORT PHC587B complies with the ECE Automotive Regulations for European forward lighting applications.

#### Key Features and 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	SiIFORT PHC587B Hard Coat Values
Solids Content, % by weight	24.2 - 26.8
Solvent	Methanol, 1-butanol, 2-propanol

Flash Point Penske Martens, Closed Cup	19.4°C
Density, g/cm <sup>3</sup>	0.875 - 0.995
pH	5.5 ± 1
Viscosity cst @ 25°C	3 - 10

### SiIFORT PHC 587 Hard Coat on polycarbonate (thickness, 6 - 8µm)

Taber Abrasion <sup>1</sup>	≤ 15D% 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.

### 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

### Containers

25 kg steel pail

### Patent Status

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### Product Safety, Handling and Storage

#### CAUTION

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

### **Refrigeration is required.**

The warranty period is 3 months from date of shipment from Momentive Performance Materials if stored in the original unopened container at 4 - 10° C.

### **Preparation From Cold Storage**

Allow SiIFORT PHC587B to return to room temperature in original container. When the coating reaches 15° C, gently mix the coating to re-constitute any material that may have separated. Solution should appear homogeneous at room temperature.

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### **Processing Recommendations**

#### **General Requirements**

Coating area should be clean, dust-free (Class 10,000 or better), well-ventilated and with the relative humidity controlled to  $40 \pm 10\%$ . Only if necessary, parts may 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  $\mu\text{m}$ , using a 5 to 8  $\mu\text{m}$  prefilter. Electric or indirect gas-fired ovens with good temperature distribution and air exchange are recommended.

#### **SiIFORT PHC587B Hard Coat**

The hard coat can be applied to parts by dip, spray, or flow coating methods. For spray applications and largepart flow coating, SiIFORT PHC587B can be reduced if desired with an appropriate solvent (e.g. 2-propanol, 1-butanol). Coating should be applied to

result in a dry film thickness of 6 - 8 µm or thicker, depending on application. The coating should be allowed to dry at room temperature until tack free for approximately 5 to 10 minutes depending on the part size.

### Curing

After the part reaches a temperature of 130°C (266°F) SiIFORT PHC587B cures to an abrasion resistant hard coat in 30 minutes.

### Limitations

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### Contact Information

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