

AS4700 HARDCOAT AND SHP470 BASECOAT

Product Description The AS4700 hardcoat with the SHP470 basecoat is a thermally cured abrasion resistant, weatherable silicone hardcoat designed primarily to protect dark colored to black polycarbonate substrates against the effects of harsh environmental components and ultraviolet radiation. This protective hardcoat system for polycarbonate imparts excellent protection for black parts exceeding those of other coating systems with its new generation of UV absorbers.

- Key Performance Properties**
- Excellent ultraviolet radiation protection for colored polycarbonate
 - Excellent resistance to microcracking
 - Abrasion and mar resistance
 - Solvent and chemical resistance
 - Good clarity
 - Thermal resistance

Typical Product Data

Property	AS4700 Hardcoat	SHP470 Basecoat
Solids content, % by weight	25	7
Solvent	Isopropanol, n-butanol, methanol	1-methoxy 2-propanol
Viscosity, cstk @ 25C	3 - 7	30 - 60
Density, g/cm ³	0.92	0.94

Weatherability: Resistance to microcracking and delamination
Substrate: Black polycarbonate plaques

Fresnel accelerated exposure with night time wetting in Arizona per ASTM D4364 - 1250 MJ/m² UV
Xenon arc accelerated exposure per SAE J1960 with boro-boro filters - 6000 hours

Outdoor exposures at 45 degrees to the horizontal and facing South in Florida and Arizona have exceeded 3 years and on-going.

Typical product data values should not be used as specifications. Assistance and specifications are available by contacting Momentive performance materials technical service.

General Requirements

Coating area should be clean, dust-free (Class 10,000 or better), well ventilated and with the relative humidity controlled at 40% or lower. If necessary, parts should be washed or wiped clean with isopropyl alcohol, or a mild detergent solution and clean water rinse, or an 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.

Both basecoat and hardcoat solutions should be filtered continuously or just prior to use to approximately 0.5 to 1.0 micron, using a 3 to 5 micron pre-filter. Electric or indirect gas fired ovens with good convection and air exchange are recommended.

SHP470 Basecoat

The basecoat can be applied by dip, spray or flowcoating to polycarbonate parts that have an initial stress level of less than 7 MPa. If a higher stress level is found, the tool and moulding conditions should be adjusted to reduce the residual stress on the parts.

Alternatively, parts can be annealed to reduce stress. If necessary, basecoat solids may be reduced by adding solvent. The basecoat should be applied to obtain a dry film thickness of about 3 microns. After application, the basecoat may be air dried until tack free and may be oven dried further at 120C for about 20 minutes. Primed parts should be allowed to cool to room temperature prior to application of the AS4700 hardcoat.

AS4700 Hardcoat

The hardcoat can be applied by dip, spray or flowcoating to polycarbonate parts with the basecoat on. If necessary, hardcoat solids may be reduced by adding solvent. The hardcoat should be applied to obtain a dry film thickness of about 6 microns. After application, the hardcoat should be air dried until tack free. After the part reaches a temperature of 130C, AS4700 will cure to an abrasion resistant coating in about 60 minutes.

Handling and Safety

Material Safety Data Sheets are available upon request from Momentive performance materials. Similar information for solvents and other chemicals used with Momentive products should be obtained from your suppliers. When solvents are used, proper safety precautions must be observed.

Storage and Warranty Period

AS4700 Hardcoat - Refrigeration is required. The warranty period is 3 months from date of shipment if stored in the original unopened container at or below 10C.

SHP470 Basecoat - Store and ship at ambient temperature approximately 2–38C. When stored in original sealed container, SHP470 will have a warranty period of 6 months. Exposures to low temperatures may cause some solid precipitation. If this occurs, the precipitate may be re-dissolved by submerging the vented closed container in a warm water bath. Mix until homogeneous.

Products may be ordered from Momentive performance materials, the Momentive performance materials sales office nearest you or where appropriate, an authorized Momentive performance materials product distributor.



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