

# StarPCS™ SMP-730

Polycarbosilane Precursor



POLYMER-TO-CERAMIC™ TECHNOLOGY

## Technical Data Sheet

StarPCS™ SMP-730 is a polycarbosilane precursor to thermally stable silicon carbide. SMP-730 is one of a family of melt-processable polymers that are solid at room temperature and readily flow at moderate temperatures. SMP-730 polymer can be used as a thermoplastic resin at low temperatures. Upon heating to higher temperatures the polymer cures to a thermoset solid. The cured polymer can then be fired to form a high temperature, oxidation resistant, amorphous silicon carbide material. SMP-730 has been used to form pre-preg, molding compounds and ceramic matrix composites.

## Product Highlights

- Low Temperature Thermoplastic Behavior, Melt-processable up to 100°C.
- Scrap polymer can be recycled, re-melted, and reused.
- Curable at temperatures above 300°C.
- Pyrolysis to form dense, amorphous ceramic<sup>1</sup>.
- Excellent oxidation resistance<sup>2</sup>.

<sup>1</sup> 1,000°C pyrolysis produces 65-67wt% ceramic yield.

<sup>2</sup> 1,000°C pyrolysis, oxidation in air at 1,000°C after 48 hours yields >99.4 wt% retention.

### Properties of StarPCS™ SMP-730

Density	1.0 g/cm <sup>3</sup>
Appearance	Amber colored solid, clear / opaque
Viscosity	Solid at Room Temperature
Compatible Solvents	THF, Hexane, Toluene, Xylene
Flash Point	>93°C (>200°F)
Filler Type	Refractory; Starfire Proprietary Distribution (optional)
Filler Loading	0 - 15 vol%
Odor	Mild
Catalyst	None
DOT / IATA Regulations	Non Hazardous
Storage	Vacuum container or inert environment; Refrigerated

\* Refrigeration of container is recommended to extend shelf life; -10°C recommended.

### Warranty

No analysis of this product is permitted. The data provided relates only to the material identified above, as supplied by Starfire Systems®, Inc. (SSI). Because conditions and methods of use of our products are beyond our control, this information should not be used as a substitution for customer's tests to ensure that SSI's products are safe, effective, and fully satisfactory for the intended end use. SSI's sole warranty is that the product will meet sales specifications in effect at the time of shipment.