

StarPCS™ SMP-850

Liquid poly-Carbosilane Precursor



Technical Data Sheet

SMP-850 is a low viscosity liquid poly-carbosilane precursor system to thermally stable silicon carbide (SiC). SMP-850 is a liquid at room temperature and cures at or above 200°C to form a thermoset solid. Cured SMP-850 can be fired in an inert environment to form an amorphous SiC at temperatures up to 1,200°C. Conversion to a crystalline and nearly Stoichiometric SiC can take place at temperatures above 1,450°C.

SMP-850 is ideal for (re)infiltration of porous structures or can be used for initial fabrication via wet layup. Additional fillers are not recommended to be added to SMP-850.

Product Highlights

- Ideal for infiltration or wet layup of fabric or chopped fiber
- Curable at temperatures between 200°C and 350°C.
- Initial fabrication with SMP-10, SMP-730, SMP-750, or SMP-850 recommended
- High mass yield through pyrolysis (850°C) with a value of **75-77%**
- Pyrolysis at 1,450°C to 1,600°C generates a yield of **74-76%**. Typical Stoichiometry of C:Si of 1.05:1.0.
- Vacuum infusion processing recommended

Properties of StarPCS™ SMP-850 (typical)	
	SMP-850
Density	1.10 – 1.15 g/cm ³
Appearance	Brown / Tan
Viscosity, 25°C**	230 – 280 cP
Compatible Solvents	Hexane, Tetrahydrofuran, Toluene
Flash Point	60°C (140°F)
Catalyst	Dicumyl Peroxide solution, 1.5 wt.%
DOT / IATA Regulations	Non-Hazardous
Storage	-10C*

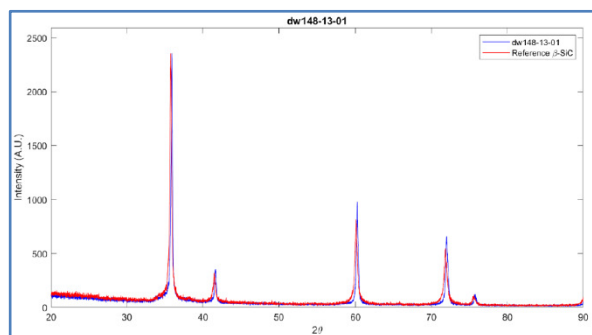


Figure 1: XRD plot of SMP-850 processed to 1600C with beta-SiC baseline overlay

*Periodic venting required

**Brookfield Viscometer, Spindle S18, 6RPM

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.