

Polyramic® SPR-212



POLYMER-TO-CERAMIC™ TECHNOLOGY

Technical Data Sheet

Polyramic® SPR-212 is a liquid precursor to thermally stable silicon oxycarbide ceramics. SPR-212 is one of a family of polymers containing both Si-C and Si-O bond structures that cure to a thermoset at low temperatures. The cured polymer can then be fired to form a high temperature, oxidation resistant, glassy material. The low viscosity liquid polymer can be used to produce coatings, molding compounds, and ceramic matrix composites.

Product Highlights

Ease of Processing

Low Viscosity Resin

- Facilitates high solids loading with fillers.
- Simplifies reinfiltration of composites.
- Virtually no odor, air stable.

Low Temperature Cure

- Curable from RT to 180°C by use of suitable catalysts.
- Use of organic resin molding techniques and materials to make near net shape.

Simple direct pyrolysis to form ceramics components

- Pyrolysis at 1°C/min to 850-1100°C produces black glassy material with ceramic yields of 60% to 80%.

Long term oxidation resistance

Retains > 98% of original mass and appearance after:

- One hour at 1400°C in flowing air
- 500 hours in 800°C air with repeated insertions/removals from furnace at temperature
- 500 hours in 1100°C air with repeated insertions/removals from furnace at temperature

Properties of Polyramic® SPR-212

Density	1.0 g/cm ³
Appearance	Clear, slightly milky
Viscosity	12 - 26 cPs
Compatible Solvents	Hexanes, Tetrahydrofuran, Toluene, Xylene
Flash Point	62°C
Moisture Absorption	< 0.1% in 24 hours at room temperature
Surface Tension	26 dynes/cm ²
Odor	Mild
Dot / IATA Regulations	Non Hazardous
Storage	Room Temperature*

* May refrigerate to extend shelf life. Must vent containers.

Warranty

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