

# SDMC-291

Dry Molding Compound



POLYMER-TO-CERAMIC™ TECHNOLOGY

## Technical Data Sheet

SDMC-291 Dry Molding Compound (DMC) is a combination alumina ( $Al_2O_3$ ) and silicon oxycarbide (SiOC) forming molding compound based on Starfire's Polysiloxane SiOC forming resin. SDMC-291 can be cold pressed (CIP), or can be hot pressed (HIP) and cured at temperatures between 200-310°C to form a nearly net shaped part which can be machined to final shape. Firing is performed at temperatures from 850°C to as high as 1,400°C. Open porosity and pore size distribution can be engineered through polymer infiltration and pyrolysis (PIP) using StarPCS™ SMP-10 and Polyamic® polymers, and also through modifying the particle sizes and distribution.

## Product Highlights

- Supplied as a dry moldable material for use with common forming methods such as compression molding, powder compaction, and vibration casting.
- Cures to green, machinable state at temperatures as low as 200°C.
- Firing temperatures from 850°C -1400°.
- No binder burn-out required; the Starfire polymer binder converts to SiOC.
- No solvent removal necessary.
- Suitable for a variety of structural, thermal, suitable for low, medium temperature applications and friction uses.
- Tailorable thermal and mechanical properties.
- Cured parts are easily machineable to complex geometries with diamond tooling.
- Highly polishable.
- Highly corrosion resistant.

## Applications

- Semiconductor Furnace Hardware
- Automotive Components
- Nozzles
- Industrial Wear Parts
- Ballistic Armor
- Mechanical Seals
- Thermal Insulator
- Fluid Processing Equipment

## Physical Properties of SDMC-291

Density	2.9 – 3.1 g/cm <sup>3</sup>
Open Porosity (%)	Tailorable based on processing
Appearance	White - Gray powder
Odor	Odorless
Storage	Room Temperature

### 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.