SI-TUFF™
PERFORMANCE SILICON CARBIDE
DELIVERING EXCEPTIONAL PROPERTIES

TECHNICAL DATASHEET

C-SCF
SILICON CARBIDE FIBER

Typical Properties

Chemical Composition	Polycrystalline β-SiC
Crystal Structure	Diamond Cubic
Geometry	High L/D Rigid Rod Fiber
Mean Diameter, µm	7
Median Length, µm	65-75 (D_{50})
Modulus, GPa	350 (estimated)
Density, g/cm^3	>3.0
Hardness (Mohs)	9.5

Product Description

SI-TUFF™ C-SCF fills a key market need for a cost-effective, high temperature fiber.

C-SCF is high. Purity discontinuous silicon carbide fiber. It can used as a reinforcement for a variety of ceramic and metal matrix composites, to enhance structural and thermal properties.

Processing and Applications

C-SCF may be used in any manufacturing process where a discontinuous fiber may be used. It resists damage during processing, and may be used in aggressive manufacturing processes that would damage continuous fibers. Because it is pure SiC, it is ideal for high temperature service environments where other fibers fail.

Compared to other SiC fibers:

- The primary benefit of C-SCF cost. The material cost of C-SCF is an order of magnitude lower than other commercial SiC fiber offerings.
- C-SCF should be considered for high temperature, high strength applications where ultimate structural performance is not critical. C-SCF is not designed to replace SiC fibers for these applications, however it may be used in combination with continuous SiC fibers to optimize cost and performance.

Compared to SiC particulate:

- The high L/D of C-SCF enables it to distribute stresses and abrasion forces over longer ranges, and also conduct heat efficiently.
- This means the composite will be stronger and tougher, and have a higher thermal conductivity and stability.

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Packaging and Product Handling

It is recommended to handle dry C-SCF powder in a controlled environment. Please consult the SDS (www.haydale-technologies.com) for additional safety and handling information.

Contact Haydale Technologies Inc.

We believe consultative sales and technical collaboration is the key to success. For assistance, please contact: sales@haydale-technologies.com

SI-TUFF™ C-SCF is highly pure β-SiC throughout its entire core.