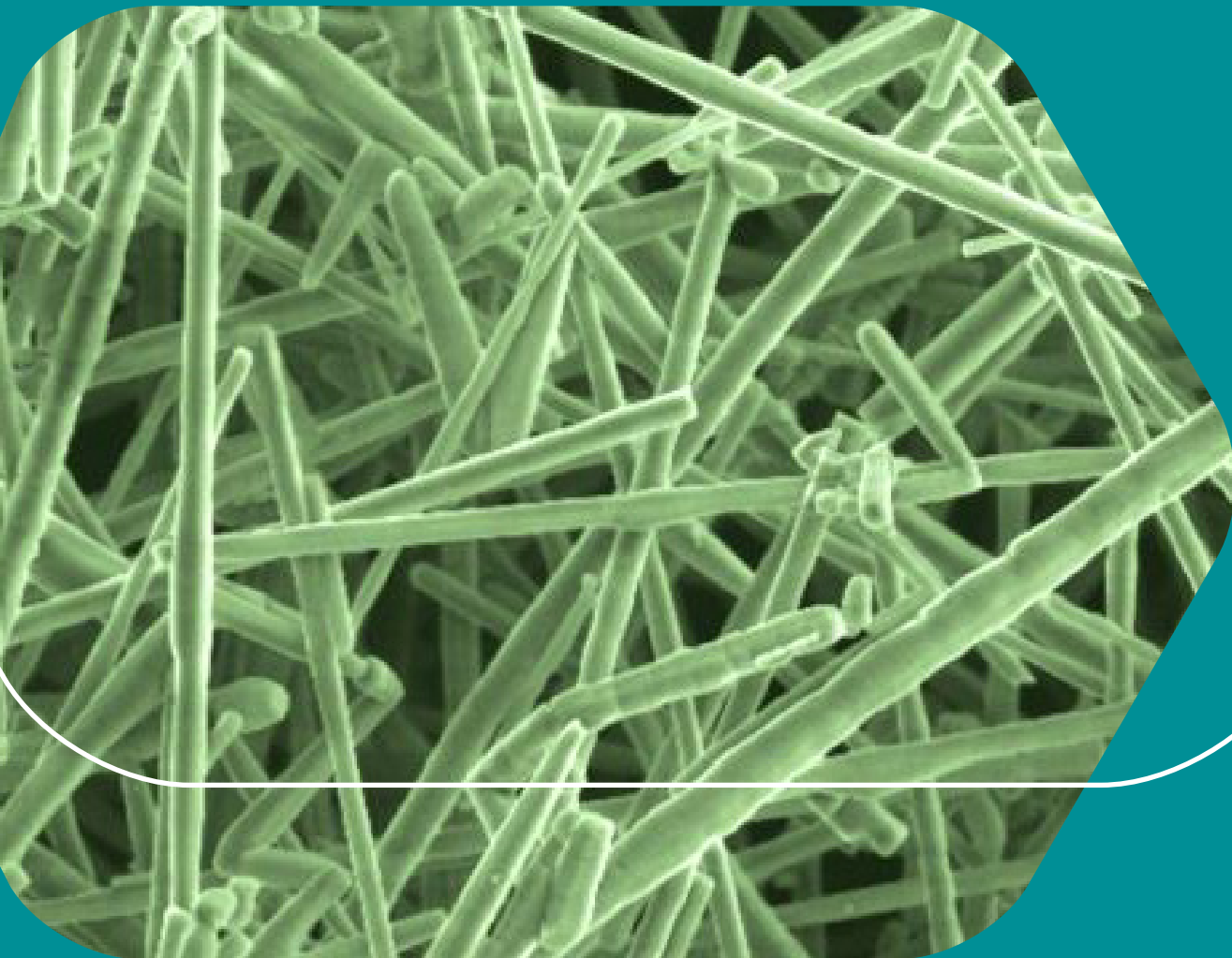


Creating Material Change



C-TUFF™ CF-1

Technical Data Sheet



Innovation underpins everything we do

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 HaydaleGraphene



CF-1 Deagglomerated Silicon Carbide Microfibers

C-TUFF™ CF-1 silicon carbide microfiber is a very high modulus rigid rod nanotube which is unbreakable at supplied lengths. It is used in high performance technical ceramic and wear parts to dramatically enhance fracture toughness, abrasion and wear resistance, and thermal and dimensional stability. CF-1 has been processed using an intense mechanical process to eliminate agglomerations and allow for easy handling and uniform dispersion.

Processing and Applications:

For use in ceramic composites, to dramatically improve physical properties. For ceramic wear parts where improved wear resistance, modulus enhancement, and improved fracture resistance are desired, loading levels of 5-15% by weight are recommended.

In high performance applications such as ceramic cutting tools, where ultimate fracture toughness is required, loading levels of 25 to 30% are recommended. C-TUFF™ CF-1 is used primarily in alumina-based composites (including Zirconia-Toughened Alumina and Alumina-TiC), although it has been used as well in monolithic SiC and cubic boron nitride.

Typical Properties	
Chemical Composition	Beta - Si
SILICA, WT%	0.35 - 0.75
Geometry	Long Rigid Rod Microfiber
Mean Diameter, μm	0.65
Medium Length, μm	10-12 (D^{50})
Modulus, GPa	450
Density, g/cm^3	3.21



SUPER TOUGH



HEAT TRANSFER



SUPER STRONG

Packaging and Product Handling:

C-TUFF™ CF-1 is produced commercially today and is available immediately for purchase

- Powder - packaged as dry powder in 50lb (16kg) bags contained in fiber drums
- Smaller quantities - available for purchase for development purposes

Dry SF-1 powder is a respirable fiber and it is recommended to be handled in a controlled environment. Please consult the SDS for additional safety and handling information.

The content supplied in this technical data sheet ("Information") supersedes all previous versions supplied. Version 1, October 2019

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