



# SF-1A DEAGGLOMERATED SILICON CARBIDE MICROFIBERS

› ADVANCED MATERIALS

## TECHNICAL DATA SHEET

### 1. TYPICAL PROPERTIES

CHEMICAL COMPOSITION	Polycrystalline $\beta$ -SiC
CRYSTAL STRUCTURE	Diamond Cubic
GEOMETRY	High L/D Rigid Rod Microfiber
MEAN DIAMETER, $\mu\text{m}$	0.65
MEDIUM DIAMETER, $\mu\text{m}$	10-12 ( $D_{50}$ )
MODULUS, GPa	450 (estimated)
DENSITY, $\text{g}/\text{cm}^3$	3.21
HARDNESS (Mohs)	9.5

### 2. PRODUCT DESCRIPTION

SI-TUFF™ SF-1A is a diamond-like SiC additive used to toughen protective coatings and extend their useful lifetime. It improves abrasion and scratch resistance, thermal conductivity, temperature stability, and hardness. It does this at low loading levels without affecting other desirable properties, including non-stick/release, flexibility, and low friction.

Amine-functionality allows SF-1A to chemically lock into the polymer matrix. This can increase performance in compatible reactive coating systems. SF-1A can interact in complex ways with your coating system, and in many applications can degrade performance.

### 3. PROCESSING AND APPLICATIONS

If used properly, service life is expected to increase by 20-35%. Critical considerations include selecting the appropriate product grade and form, exercising proper dispersion technique, incorporating into the correct coating layer(s), and using the right loading levels. Haydale Technologies Inc. recommends reviewing the Applications Guide for more detailed usage information before beginning your evaluation.

### 4. PACKAGING AND PRODUCT HANDLING

SI-TUFF™ SF-1A is produced commercially today and is available immediately for purchase. It can be packaged as a dry powder or a dispersion in resin, oligomer or monomer. Powder is packaged in 50lb (22.7kg) bags contained in fiber drums. Aqueous dispersions are packaged in 400lb (181kg) steel drums. Smaller quantities are available for purchase for development purposes.

Dry SF-1A powder is a respirable fiber and it is recommended to be handled in a controlled environment. Please consult the SDS ([www.Haydale-technologies.com](http://www.Haydale-technologies.com)) for additional safety and handling information.

### 5. CONTACT HAYDALE CERAMIC TECHNOLOGIES,

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