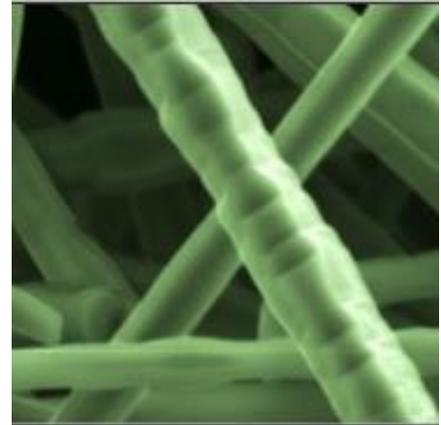


## Typical Properties

Chemical Composition	Polycrystalline $\beta$ -SiC
Crystal Structure	Diamond Cubic
Geometry	High L/D Rigid Rod Fiber
Mean Diameter, $\mu\text{m}$	7
Mean Length, $\mu\text{m}$	45-50 ( $D_{50}$ )
Modulus, GPa	350 (estimated)
Density, $\text{g/cm}^3$	>3.0
Hardness (Mohs)	9.5



## Product Description

SI-TUFF™ P-SFA 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. Chemically, P-SFA is high purity, polycrystalline  $\beta$ -silicon carbide ( $\beta$ -SiC). It has the same cubic crystal structure as diamond and a high aspect ratio, giving it exceptional hardness, mechanical properties, and reinforcing ability. Amine-functionality allows P-SFA to chemically bond into the polymer matrix. This can increase performance in compatible reactive coating systems. P-SFA can interact in complex ways with your coating system, depending on parameters such as crosslink density. Higher crosslink density systems are generally recommended. For low crosslink density systems, consider the use of P-SF. Side-by-side testing of P-SF and P-SFA is recommended.

## Application Information

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.

## Packaging and Product Handling

SI-TUFF™ P-SFA is currently available in small quantities for lab-scale testing. P-SFA may be supplied as a dry powder, an aqueous dispersion, or a dispersion in resin, oligomer or monomer. It is recommended to handle dry P-SFA powder in a controlled environment. Please consult the SDS ([www.haydale-technologies.com](http://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. Please email us at [sales@haydale-technologies.com](mailto:sales@haydale-technologies.com)

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