# CERAMTUFF™

Engineered Ceramic Blend

**TECHNICAL DATASHEET**

## CERAMTUFF™ HA9S
## Hot Press-Ready
## Ceramic Blend

### Typical Properties-Sintered Ceramic

| | | |
|---|---|---|
| Density | $g/cm^3$ | 3.72 |
| Flexural Strength | MPa | 550 - 700 |
| Young's Modulus | GPa | 400 |
| Vickers Hardness | GPa | 20.7 |
| Fracture Toughness | $MPa \cdot m^{1/2}$ | 7 - 9 |
| Thermal Conductivity | $W / m \cdot K$ | 35 |
| Thermal Shock Resistance (ΔT) | °C | 1000 |
| Coefficient of Thermal Expansion | $10^{-6}$ / °C | 6.8 |

### Product Description

CERAMTUFF™ HA9S is a press-ready engineered blend of Silar® silicon carbide whisker and alumina used to produce exceptionally tough ceramics. It is characterized by excellent fracture resistance, wear resistance, and thermal and dimensional stability. HA9S is completely inert and can be used in the most demanding physical and chemical environments.

### Application Information

For use in high performance ceramic cutting tools and ceramic wear parts, including indexable inserts, dies, pipe liners, nozzles, and other critical process equipment. HA9S is supplied without binder and must be hot pressed under inert gas.

### Packaging and Product Handling

HA9S is packaged as a dry powder in 315lb (143kg) bags contained in drums. Smaller quantities are available for development purposes. Dry HA9S powder must be handled in a controlled environment. Please consult the material safety data sheet (www.haydale-technologies.com) for additional safety and handling information. Other product forms may be available on request.

### Contact Haydale Technologies Inc.

For technical and sales assistance, please e-mail sales@haydale-technologies.com