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Scientific Cutting Tools, Inc.
 Chip Control Insert for Small Diameter Boring

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Major Categories

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Specific Polymer

Category / Grades

Datasheet

Supplier Info

Resources

Bibliography

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FREE Publications

- Waste Management ★
- NASA Tech Briefs ★
- Chemical Engineering ★
- World Pumps ★
- Power Magazine
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Composite Fabrication

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Epoxy

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Additives: carbon fiber reinforced

Application: sheet molding compound (SMC)

Material Properties

Mechanical Properties		Conditions		
		State 1	State 2	ASTM
Elastic Modulus (MPa)	69000	tensile		D638
Flexural Modulus (MPa)	34500	23 °C		D790
Tensile Strength (MPa)	276 - 345	at break		D638
Compressive Strength (MPa) at yield or break	207 - 276			D695
Flexural Strength (MPa) at yield or break	518 - 656			D790
Elongation at break (%)	1 - 2			D638
Hardness	55 - 65	Shore B		D638
Izod Impact (J/cm of notch) 1/8" thick specimen unless noted	8.0 - 10.6			D256A

Thermal Properties		Conditions		
		Pressure	State	ASTM
Coef of Thermal Expansion (10 ⁻⁶ /°C)	3			D696
Deflection Temperature (°C)	288	1.82 MPa		D648
Thermal Conductivity (W/m-°C)	0.059 - 0.063			C177

Physical & Electrical Properties		Conditions	
		State	ASTM
Specific Gravity	1.6		D792
Water Absorption (% weight increase)	0.1	after 24 hrs	D570

Processing Properties		Conditions	
		Type	ASTM
Melting Temperature (°C)	thermoset	T _m , crystalline	
Processing Temperature (°C)	132 - 166	compression molding	
	132 - 166	transfer molding	
Molding Pressure (MPa)	3 - 14		
Compression Ratio	2		
Linear Mold Shrinkage (cm/cm)	0.001		D955

Suppliers

[Quantum Composites, Inc.](#) Midland, MI 800-462-9318

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