

AGY Advanced Materials

For Demanding Composite Applications Selecting
Your High Performance Material Solution
Is As Easy As **1..2..3**



S-Series™ High Performance Materials

- **S-1 Glass™ – Industrial Grade Product**

High Volume Applications where E-Glass performance does not deliver

S-1 Glass™ Benefits vs E-Glass

- Higher Tensile Strength
- Higher Tensile Modulus
- Higher Temperature Resistance
- Lower Weight

- **S-2 Glass® – High Performance Grade Product**

Higher performance grade product than S-1 Glass™ with a broad range of properties for specification driven applications

- **S-3 Glass™ – Special Grade Product**

Special grade product with properties tailored for high performance niche applications

S-Series™ Added Benefits

- Sizing chemistries that are tailored to a range of thermoplastic and thermoset composite applications
- Wide range of product forms, sizes and filament diameters available
- Boron Free - environmentally friendly
- AGY multi-site manufacturing capabilities based in the USA
- Global sales and application development support
- AGY offers a unique one-stop opportunity for product performance needs of designers and specifiers

For product samples please call 1.888.434.0945 (Toll Free US) or (+33) 4727 81775 (France)

AGY Advanced Materials

For Demanding Composite Applications Selecting
Your High Performance Material Solution
Is As Easy As 1..2..3

S-Series™ High Performance Materials

	Product Form	Market	Applications	Fiber Diameter	TEX	Resin Compatibility
S-1 Glass™	Single End	Wind Energy	Blade Spar	18	2400	Epoxy Polyester
	Assembled	Defense	Spall Liner, EFP	7, 9	1980	Epoxy
	Single End	Industrial	CNG Pressure Vessel	14 Plus	735	Epoxy
	Single End	Industrial	Long Fiber Thermoplastic	14 Plus	735	Thermoplastic
	Chop	Industrial	Compounds	14 Plus	NA	Thermoplastic
S-2 Glass®	Assembled	Aerospace	Flooring, Cargo Liners	7, 9	1980/660/400	Epoxy Thermoplastic
	Single End	Automotive	Muffler Fill	24	2050	NA
	Yarn	Aerospace	Fabrics	7, 9	33/66	Epoxy Thermoplastic
	Chop	Industrial	Thermal Insulation	9	NA	Epoxy
	Cake	Automotive	Timing Belts	7	22/66	Rubber
	Assembled	Defense	Spall Liner, EFP, Structural Parts	7, 9	1980	Epoxy
S-3 Glass™	Assembled	Aerospace	Metal Matrix Composites	9	660	Epoxy

Physical Properties	Test Method	Units	S-2 Glass® Fiber	S-1 Glass™ Fiber	Hi Per-Tex	E-Glass
Strand Tensile Strength	ASTM D2343	MPa (Kpsi)	3,569 - 3,677 (518 - 533)	3,228 - 3,337 (468 - 484)	2,038 - 2,821 (296 - 409)	2,070 - 2,235 (300 - 324)
Strand Tensile Modulus	ASTM D2343	GPa (Mpsi)	87 - 90 (12.6 - 13.1)	84 - 87 (12.2 - 12.6)	83 - 86 (12.0 - 12.5)	69 - 76 (10.0 - 11.0)
Bulk Glass Density	ASTM D1505	g/cc (lb/cu.in.)	2.49 (0.090)	2.55 (0.092)	2.57 (0.093)	2.63 (0.095)
Glass Fiber Density	ASTM D792	g/cc (lb/cu.in.)	2.46 (0.089)	2.52 (0.091)	2.54 (0.092)	2.58 (0.093)
Softening Point	ASTM C338	°C (°F)	1056 (1933)	996 (1825)	963 (1765)	846 (1555)
Coefficient of Thermal Expansion	ASTM D696	x10 ⁻⁷ /°C (x10 ⁻⁷ /°F)	29 16	43 24	41 23	54 30



AGY World Headquarters

2556 Wagener Road • Aiken, SC 29801 • USA
Tel: + (1) 803.648.8351 • Fax + (1) 803.643.1180
Email: asktheexpert@agy.com

AGY Europe

Le Gemellyon Nord • 57 Boulevard Marius Vivier Merle
69003 Lyon • France
Tel: + (33) 4727 81775 • Fax: + (33) 4727 81780

www.agy.com

DISCLAIMER OF LIABILITY

This data is offered solely as a guide in the selection of a reinforcement. The information contained in this publication is based on actual laboratory data and field test experience. We believe this information to be reliable, but do not guarantee its applicability to the user's process or assume any liability arising out of its use or performance. The user, by accepting the products described herein, agrees to be responsible for thoroughly testing any application to determine its suitability before committing to production. It is important for the user to determine the properties of its own commercial compounds when using this or any other reinforcement. BECAUSE OF NUMEROUS FACTORS AFFECTING RESULTS, WE MAKE NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. STATEMENTS IN THIS DOCUMENT SHALL NOT BE CONSTRUED AS REPRESENTATIONS OR WARRANTIES OR AS INDUCEMENTS TO INFRINGE ANY PATENT OR VIOLATE ANY LAW, SAFETY CODE OR INSURANCE REGULATION.