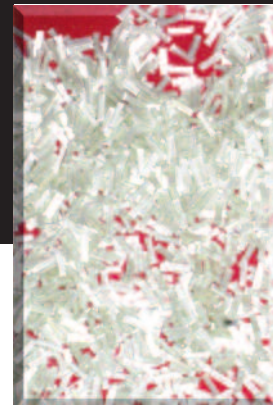


AGY Advanced Materials

S-3 UHM™ High Performance Fibers *The Highest Stiffness in Glass Fibers*



AGY, the leading global producer of high-strength glass fibers, introduces S-3 UHM™ glass fibers, a breakthrough in the development of ultra-high modulus glass fibers

S-3 UHM™ High Performance Fibers - Features and Benefits

- S-3 UHM™ glass fiber performance was developed using AGY's advanced Modular Direct Melt (MDM) production technology and utilizes a proprietary formulation of S-Glass raw materials to produce this unique glass fiber
- With the highest tensile modulus glass fiber available [99 GPa (14,359 ksi)], it is an improvement of approximately 40% over E-Glass
- The proprietary glass formulation is designed to maximize tensile modulus properties while balancing other properties of glass fibers such as:
 - Non-conductive – electrical
 - High impact performance
 - Low coloration of resins and finished parts
 - High temperature resistance
 - Low moisture absorption
- A range of sizing chemistries is available including epoxy, polyester, and a range of thermoplastic resins
- Boron-free and environmentally friendly

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

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S-3 UHM™ High Performance Fibers The Highest Stiffness in Glass Fibers

Physical Properties	Test Method	Units	S-3 UHM™	S-2 Glass®	S-1 HM™	E-Glass
Strand Tensile Strength	ASTM D2343	MPa (Kpsi)	3,228-3,338 (468-484)	3,569-3,677 (518-533)	3,048-3,135 (442-455)	2,070-2,235 (300-324)
Strand Tensile Modulus	ASTM D2343	GPa (Mpsi)	99 (14.3)	90 (13.1)	90 (13.1)	69-76 (10.0-11.0)
Bulk Glass Density	ASTM D1505	g/cc (lb/cu.in.)	2.86 (0.103)	2.49 (0.090)	2.55 (0.092)	2.63 (0.095)
Glass Fiber Density	ASTM D792	g/cc (lb/cu.in.)	2.83 (0.102)	2.46 (0.089)	2.52 (0.091)	2.58 (0.093)
Softening Point	ASTM C338	°C (°F)	964 (1767)	1056 (1933)	948 (1738)	846 (1555)
UD Fabric Lamniate Properties (60% FVF)						
Tensile Strength	ASTM D3039	MPa (Kpsi)	1435 (208)	1710 (248)	1230 (178)	775 (112)
Tensile Modulus	ASTM D3039	GPa (Mpsi)	62 (8.99)	56 (8.12)	54 (7.83)	42 (6.09)
Flexural Strength	ASTM D790	MPa (Kpsi)	1777 (258)	1690 (245)	1428 (207)	1173 (170)
Flexural Modulus	ASTM D790	GPa (Mpsi)	61 (8.85)	55 (7.98)	53 (7.69)	41 (5.95)
Compressive Strength	ASTM D3410	MPa (Kpsi)	1024 (149)	1140 (165)	887 (129)	600 (87)
Compressive Modulus	ASTM D3410	GPa (Mpsi)	61 (8.85)	55 (7.98)	53 (7.69)	41 (5.95)

AGY has a long-standing track record of meeting the demands for challenging customer requirements with unique and dynamic modifications of sizing and glass fiber chemistries. AGY has the largest portfolio of glass chemistries of any glass fiber manufacturer including E-Glass, S-2 Glass®, L-Glass™, S-1 Glass® and S-1 HM™ Glass along with a range of specifically designed products under the S-3 glass nomenclature including S-3 HPB® for the healthcare, S-3 HDI™ for use in the electronics and now S-3 UHM™ for high stiffness applications in a wide range of markets and applications.

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