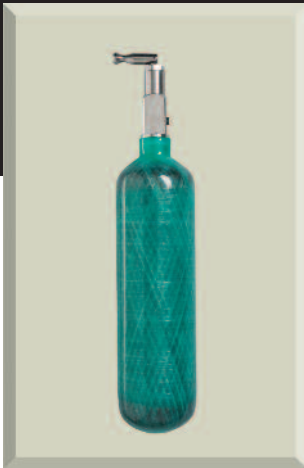


AGY ADVANCED MATERIALS

S-1 HM[®] High Performance Fibers to Meet Your Demanding Requirements



AGY, the leading global supplier of high performance glass fibers, has developed S-1 HM[®] fibers and can supply it in the format and with the sizing to meet your application requirements.

S-1 HM[®] Fibers Features and Benefits

- ▶ The highest tensile modulus glass fiber available – 90 GPa
- ▶ Proprietary glass formulation designed to maximize performance properties while allowing for high volume, economical manufacture
- ▶ S-1 HM[®] fibers performance vs. typical E-Glass:
 - 20% higher tensile modulus
 - 50% higher tensile strength
 - 10x higher fatigue
 - reduced density
- ▶ A range of sizing chemistries designed for compatibility with epoxy, polyester and thermoplastic resins are available
- ▶ 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-1 HM[®] High Performance Fibers to Meet Your Demanding Requirements

| S-1 HM [®] Glass Properties | | | | |
|--|-------|-------------------|---------------------------|-----------------|
| | ASTM | Units | S-1 HM [®] Glass | Typical E-Glass |
| Glass Strand Properties | | | | |
| Density | | g/cc | 2.55 | 2.58 |
| Tensile Strength | D2343 | MPa | 3090 | 2100 |
| Specific Tensile Strength | | 10 ³ m | 121 | 81 |
| Tensile Modulus | D2343 | GPa | 90 | 73 |
| Specific Tensile Modulus | | 10 ³ m | 3.53 | 2.83 |
| UD Fabric Laminate Properties (60% FVF) | | | | |
| Tensile Strength | D3039 | MPa | 1230 | 775 |
| Tensile Modulus | D3039 | GPa | 51 | 40 |
| Compressive Strength | D3410 | MPa | 850 | 600 |
| Compressive Modulus | D3410 | GPa | 51 | 41 |
| Flexural Strength | D790 | MPa | 1390 | 1200 |

S-1 HM[®] fibers, developed as a next generation of S-Glass products, is designed to give the highest mechanical properties while meeting the economic needs for the reinforcement market. AGY has a long-standing track record of meeting the demands for challenging customer requirements with unique and dynamic modifications of glass and sizing chemistries.

AGY has the largest portfolio of glass chemistries of any glass fiber manufacturer including E-Glass, S-2 Glass[®], L-Glass[®], S-3 HDI[®] Glass, S-1 Glass[®] and S-1 HM[®] Glass.

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