PRODUCT INFORMATION

AGY S2 Glass® fiber Chop

Superior glass fiber for superior products.

AGY is a leading innovator and producer of specialty glass fibers enabling high-performance composite solutions critical to aviation, defense, architecture, and telecommunications. Flexible production operations and cutting-edge R&D allow AGY to customize solutions and develop next-generation products for your most pressing challenges.

AGY S2 Glass Chop

These high-strength fibers are uniquely designed to meet the demanding performance requirements for applications across a wide range of industries.

- Non-conductive for electrical applications
- Superior impact resistance
- Excellent color retention in finished parts

Product solutions

S2 Glass fibers offer a unique combination of properties, including strength, stiffness, and impact resistance. This allows the compounder to reach new levels of mechanical performance with the same glass loading or to reduce glass loading and keep the same mechanical performance while improving other features of the final compound.

Product description

AGY offers a broad spectrum of binder systems specifically designed to optimize performance in a wide range of resin systems, enabling these fibers to deliver 30% more tensile and modulus along with increased impact and excellent color-retention properties.

Resin compatibility

AGY has a full array of binder systems offering excellent compatiblity in both semi-crystalline and amorphous systems across a wide range of polymer systems, including:

- High-performance plastics such as PEEK, PEKK, PPS, and PEI
- Engineered plastics such as PET, PBT, nylon, polycarbonate, and urethane
- Commodity plastics such as PP, PVDF, and ABS

Features	Benefits
30% higher strength and 15% higher tensile modulus vs E Glass at the same fiber volume fraction	Consistent high performance for reliable and durable finished parts
Better fiber toughness, modulus of resilience, and impact deformation than conventional glass fiber	Improved impact capabilities to finished parts and higher composites durability and damaged tolerance
Softening point: 1056°C (1932°F) Annealing point: 816°C (1500°F) Strain point: 766°C (1410°F)	Greater fiber tensile strength and stability at elevated temperatures
Enhanced flexural stiffness	34% stiffer than conventional glass fiber
Excellent tolerance to damage accumulation	Ability of composite parts to withstand high levels of tension and flexural fatigue without catastrophic failure
20% reduction in dielectric constant over E Glass fibers	Radar transparency
Long shelf life, good machinability, and excellent durability	Consistent performance and reliability

Product information

Filament diameter US	Filament diameter Micron	Filaments per bundle	Binder	Chop length	Resin compatibility	Packaging
G	9	816	528	4mm (5/32")	Polycarbonate	50 lb boxes or bulk bags
			544		Nylon	
			553		PEEK, PPS, PEI	
			599		Polypropylene	
		408	463		Epoxy (anhydride), Phenolic	50lb box
			401	6mm (1/4")	Epoxy / urethane	
			402	12mm (1/2")	Starch based, good dispersion	

Comparative product properties

Comparative test data of E Glass vs S2 Glass Chop with 553 binder in typical resin systems

		Polyether Ether Ketones			Polyenylene Sulfides		
		PEEK (30%)			PPS (30%)		
	Units	E Glass	S2 Glass 553	% Change	E Glass	S2 Glass 553	% Change
Impact	Ft-lb-in	2.6	2.9	12%	1.3	2.3	73%
Tensile strength	psi	22,700	27,207	20%	17,048	24,096	41%
Tensile modulus	psi	1,645,918	1,848,732	12%	1,592,625	1,691,047	6%
Tensile elongation	%	2.2	2.5	14%	1.4	2.0	45%
Flexural strength	psi		37.906		30,043	40,047	33%
Flexural modulus	psi		1,122,097		1,498,238	1,647,404	10%
Ash	%	29.4	28.9	-2%	34.8	28.3	-19%
Specific gravity	g/cm^3				1.59	1.53	-3%

Comparative test data of E Glass vs S2 Glass Chop with 544 binder in typical resin systems

		Polyamides			Polycarbonates		
		Nylon 6-6 (30%)			Polycarbonate (10%)		
	Units	E Glass	S2 Glass 544	% Change	E Glass	S2 Glass 544	% Change
Impact	Ft-lb-in	1.3	2.4	85%	2.0	2.1	8%
Tensile strength	psi	18,712	25,800	38%	10,567	13,352	26%
Tensile modulus	psi	1,100,129	1,379,875	25%	469,531	547,055	17%
Tensile elongation	%	3.6	3.8	6%	9.1	5.9	-35%
Flexural strength	psi	30,416	40,270	32%	20,133	21,891	9%
Flexural modulus	psi	909,299	1,095,162	20%	544,585	544,635	2%
Ash	%	29.0	28.8	-1%	9.8	9.8	0%
Specific gravity	g/cm^3	1.37	1.34	-2%	1.26	1.26	0%

All data shown is for 9-micron E Glass vs 9-micron S2 Glass Chop using ASTM methods in a controlled laboratory environment. Data in other systems available. Please contact your AGY representative for further information.

www.agy.com

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