

Ceramic Continuous Filaments

Since 1922, Saint-Gobain Advanced Ceramic Composites formerly known as Saint-Gobain Quartz or Quartz & Silice has been a solution provider to Aeronautic, Defense and Railway industries. Based in Nemours (France), Courtenay (France) and also in Louisville, KY (US), Saint-Gobain Advanced Ceramic Composites has started in 2022, its journey towards being a world-wide leader in the production of continuous ceramic filaments.

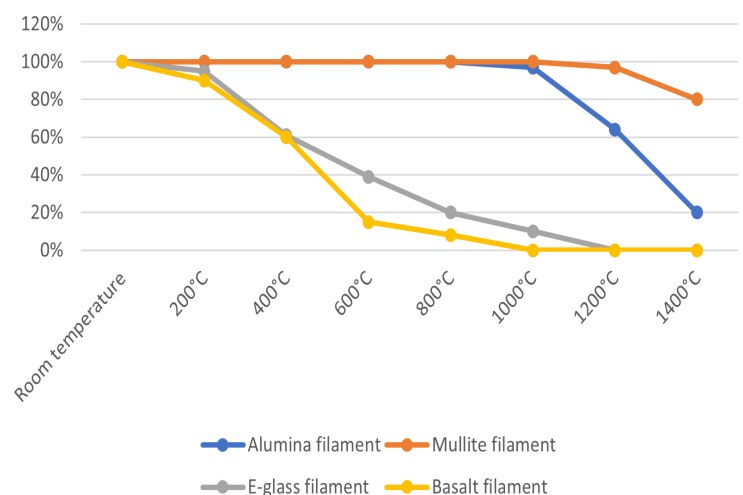


Oxide Ceramic Continuous Filaments (Alumina, Mullite) are homogeneous, continuous and specifically developed for structural applications in high temperature environments. Compatible with several matrix (polymer, ceramic, metal) to reach outstanding and enhanced performances.

Unique features with ceramic filaments

- High strength/modulus
- Integrity of the fiber up to 1200°C
- Low elongation at operating temperatures
- Low shrinkage at operating temperatures
- Excellent resistance to thermal shock
- Good chemical resistance
- Low thermal conductivity
- Good electrical insulation
- Low porosity
- Good dielectric properties

Evolution of tensile strength with temperature



PRODUCT PORTFOLIO

The following table gives details of the product portfolio of Continuous Ceramic Filaments:

Type	Chemistry		Density g/cm ³	Filament diameter µm	Available references YARNS & ROVINGS	Available sizing
	SiO ₂	α-Al ₂ O ₃			Denier*	
Alumina	-	> 98.5%	3.7 - 3.8	9 - 11	1500 - 3000	PVA - based
Mullite	25%	75%	3.1		1300 - 2500	

Standard bobbin weight : 0.5kg
 Chopped fibers (6 or 12 mm) available on demand
 *Denier = g/9000m.

TECHNICAL DATA

Typical values for Continuous Ceramic Filaments (internal data):

Type	Tensile strength			Tensile modulus GPa / filament	Thermal expansion ppm/°C	Elongation %
	MPa / filament					
	20°C	1000°C	1200°C			
Alumina	2200	2130	1410	320	8	0.6
Mullite	1450	1450	1400	200	5	0.7

- PVA-based sizing is a high performing sizing, recommended for most textile processes and composite applications. It is compatible with organic resins and can be easily removed for compatibility with inorganic matrix.

STORAGE

Continuous Ceramic Filaments properties are guaranteed for 24 months when properly stored indoors, protected from direct sunlight exposure and in its original packaging. Store preferably at less than 35°C, avoiding humidity consistently higher than 80%.

Dual-use disclaimer: Continuous Ceramic Filaments are all classified as a dual-use commodity by the European and US authorities. Therefore, an export license is required to export these goods to some countries. Our team will support you in this process.

The information given in this data sheet is believed to be accurate and reliable. However it is the users responsibility to determine whether the material is suitable for their particular application, process and/or environment. This data sheet may be modified without prior notice.

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<https://www.advanced-ceramic-composites.saint-gobain.com>

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