



Argosy International Inc.

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www.argosychemical.com

HIGH SILICA MATERIALS



High silica materials are made of amorphous silica with a filament diameter in average 9 microns. They are used in high temperature thermal insulation and thermal protection products throughout industry. High silica materials are used as a replacement for asbestos and are used mainly in the refining, electrical, aerospace, metallurgy, shipbuilding and automotive industries.

These materials have very low thermal conductivity and high resistance to thermal shock. They have superb electrical insulation properties at high temperatures and can be used for long periods of time at 1832 °F (1000 °C) and at up to 3092 °F (1700 °C) for a short period without changing of their properties.

Products made of high silica glass are extremely inert to the majority of chemical reagents and resistant to organic and mineral acids of any concentration, even at elevated temperatures. Exceptions to this chemical resistance are hydrofluoric, phosphoric and hydrochloric acids as well as weak alkalies of molten metals (except magnesium, sodium and silicon) and alloys. They have high chemical resistance to water and steam at high pressure and are capable of absorbing moisture without damage integrity of the filaments/fibers.





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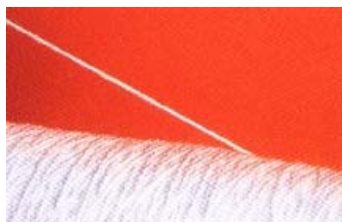
HIGH SILICA MATERIALS

High Silica Products - Introduction



High Silica Fabrics

High silica fabrics are used for high temperature insulation and thermal protection in a variety of applications such as: refractory padding; gaskets and blankets; protection from flame and splashes of molten metal; excessive heat; and as filler for composite materials and for the manufacture of filters used for cleaning corrosive products.



High Silica Yarns

These are equalized twisted yarns which are then subjected to chemical and thermal treatment and wound on spools. For composites and high temperature applications, yarn can heat through to minimized shrinkage, which manufactured which have all the above mentioned properties but are additionally with epoxy or phenolic compose at the elevated temperature.



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High Silica Products - Introduction



High Silica Fiber

High silica fiber has been developed for use as thermal insulation & reinforcement materials. We also manufacture material in different friction products.

Applications:

- High Temperature Insulation
- Fireproof products

High Silica Needle felt

High silica needle felts are a combination of fluffy fibers non-woven fabric. They provide superb high temperature thermal insulation and thermal protection and can be used for a long period of time at 1832 °F (1000 °C) and at higher temperatures for a short period of time. They do not melt or evaporate temperatures up to 3092 °F (1700 °C) without changing properties.

Applications:

- Furnace Insulation
- Acoustic Insulation system
- High temperature & acid resistant gaskets
- Fire protection
- Muffler packing



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High Silica Products - Introduction

High Silica Mesh for Casting Filters

High silica fiberglass mesh for casting filters is treated with a high-temperature resistant coating to form rigid sheets. It is used for filtering molten metal in the casting of grey cast iron and ductile cast iron.

High Silica Products - Properties

High Silica Fabric: SiO₂> 98%

Part #	Weave	Density (yarns/in)		Weight (oz/sq yd.)	Tensile strength (N)		Thickness (in.)
		Warp	Fill		Warp	Fill	
AHS-08	Plain	23	21	8.8			0.013
AHS-03	Plain	41	33	3.5	340	340	
AHS-04	Plain	25	25	5.3	542	542	
AHS-10	2X2 Twill	30	25	11.8	1200	985	0.016
AHS-17	8HS satin	48	33	17.7	1400	1400	0.024
AHS-17-LTS	8HS satin	43	33	17.7	985	680	0.024
AHS-30	12HS satin	43	33	32.4	1970	1475	0.039
AHS-30-LTS	12HS satin	45	33	32.4	1465	975	0.043
- LTS: Pre-shrink							

High Silica Fabric: SiO₂>96%

Part #	Weight (oz/sq yd.)	Density (yarns/in)		Thickness (in.)	Width (in.)
		Warp	Fill		
CHS-07	7.1	30	30	0.010	39
CHS-11	11.8	50	30	0.016	39
CHS-15	15.3	45	38	0.026	36
CHS-18	17.7	48	38	0.030	39
CHS-32	32.4	56	36	0.051	36



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High Silica Products - Properties

High Silica Yarn: SiO₂ > 98%

Product Codes	Nominal linear density (tex)	Number of twists per yard	Tensile strength (N)
AHS-Y9-136	136	80 or 130	24.7
AHS-Y9-180	180	120 or 150	29.6
AHS-Y9-180*3	540	20 or 100	88.4

High Silica Yarn: SiO₂ 94-96%

Product Codes	Nominal linear density (tex)	Number of twists per yard	Tensile strength (N)
AS-Y6-68	60	150 or 200	14.7
AS-Y6-90	90	150	19.6
AS-Y6-136	136	80 or 130	29.3
AS-Y6-180	180	120 or 150	39
AS-Y6-180*3	540	20 or 100	98.0
AS-Y6-170	170	130 or 150	39.2
AS-Y6-170*2	340	20 or 100	68.6
AS-Y6-170*3	510	20 or 100	98.0



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High Silica Products - Properties

High Silica Fiber

Product Codes	Fiber length (in.)	% Moisture (less than)
AHS-F- 9	2- 4; 8 + 4/-0	3.6
AHS-F-9-S	0.02 - 0.8	3.6

High Silica Mesh for Casting Filters

1. High Silica Mesh Fabric for Casting Filters

Product Codes		Weight (oz / sq yd.)	Hole Size (inch)	Porosity (%)	SiO2 (%)	Width (inch)	Suitable Uses
XR-II	HSM06-32	3.5	0.06×0.06	55	96	32	Grey cast iron and ductile cast iron
	HSM08-32	4.4	0.08×0.08	65	96	32	
	HSM10-32	4.4	0.10×0.10	70	96	32	
XR-III	HSM10-36	8.3	0.10×0.10	50	96	36	Small scale cast steel
	HSM08-36	10.3	0.08×0.08	45	96	36	

2 High Silica Mesh Pieces for Casting Filters

- Standard sheet size: 12×6 inches; other sizes to a maximum of 39 × 31 inches are available upon request.

Type	Working Temperature (°F)	Soft Point (°F)	Continuous Working Time	Tensile Strength (N/4ends)	Suitable Uses
XR-II	2500 - 2600	3200	< 10 minutes	> 11	Grey cast iron and ductile cast iron
XR-III	2900 - 2950	3200	< 15 seconds	> 16	Small scale cast steel