

Quartz glass wool



Chemical Properties of Quartz glass wool

Quartz glass is extremely resistible against water, salt dilutions and acids. In the class qualification of the German Industrial Norms for the chemical stability of the glass it is set in the first stability class, i.e. among the best, which includes also stability against bases.

Quartz glass, unlike the ordinary glass, is not a hygroscopic, i.e. it does not crumble. It can be disintegrated by hydrofluoric acid only. Oxide free metals, alkali and earth alkali metals excluded, do not chemically react to quartz glass, which means, the quartz glass dishes are suitable places for their distillation and fusion. Quartz glass is sensitive against all alkali and earth alkali connections, because even the small traces of it lead to accelerated deglassing at high temperatures.

- Hydrolytic resistivity upon DIN 12111

1. Hydrolyze class:

Declaration of bases

$$< 0,01 \frac{\text{mg Na}_2\text{O}}{2\text{g Grit}}$$

- Acid resistivity upon DIN 12116

1. Acid class:

Loss of weight $< 0,1 \text{ mg/dm}^2$

Surface

- Base resistivity upon DIN 52322

1. Base class:

Loss of weight ca. 50 mg/dm^2

Surface

Typical external elements in Quartz glass - in weight-ppm -

Symbol	HSQ 100...400
Al	10...22
As	<0,002
Au	<0,0001
Ca	0,2...1
Cr	<0,06
Cu	<0,02
Fe	0,1...0,3
K	0,1...0,5
Li	0,5...1
Mg	0,1...0,2
Na	0,1...0,2
Sb	<0,0002

Heat Conductivity of Quartz glass wool

Temperature

Density of the Quartz glass wool package

$40 \text{ kg/m}^3 = 0,04 \text{ g/cm}^3$

$100 \text{ kg/m}^3 = 0,1 \text{ g/cm}^3$

W

W

K · m

K · m

50 °C

0,044

0,047

100 °C

0,057

0,056

200 °C

0,091

0,074

300 °C

0,135

0,098

400 °C

0,188

0,126

500 °C

0,247

0,156

600 °C

0,316

0,189

700 °C

0,397

0,227

800 °C

0,488

0,273

Reactions of diverse Elements and Connections to Quartz glass

The symbols in this table mean:

- x the element or the connection does not react to quartz glass
- xx it reacts above the shown temperature only
- xxx the fusion flow of the connection reacts to quartz glass only
- xxxx the element or the connection reacts to quartz glass

Metals and Non- Metals			Acids		
x	Ag		x	H ₂ SO ₄	
xx	Al	at 700 till 800 °C fast reaction	x	HNO ₃	
x	Au		x	HCl	
x	Br		xxxx	HF	lower reaction than to ordinary gas
xx	C	1500°C plus	xxxx	H ₃ PO ₄	lower reaction than to ordinary gas
xx	Ca	600°C plus	x	Organic acids	
x	Cd		Gases and Vapors		
xx	Ce	800°C plus			
x	Cl	Even at heat or humidity without reaction	x	HCl	
xxxx	F	Only if moist	x	H ₂ ; N ₂ ; O ₂	
x	Hg		x	NO ₂ ; SO ₂	
x	J		x	Co	
xxxx	Li	250°C plus	Salts		
xx	Mg	at 700 till 800°C fast reaction			
x	Mn		xxx	BaCl ₂	
x	Mo		xx	BaSO ₄	700°C plus
x	Na	reacts if vaped only	xxx	Borate	
xxxx	P		xx	BCl ₃	900°C plus
x	Pb		xxx	KCl	speeds up the deglassing
x	Pt		xxx	KF	
xx	S	1000°C plus, very weak reaction	xxx	NaCl	
xxx	Si		xxxx	Na-Metaphosphate	
x	Sn		xxxx	Na-Polyphosphate	
x	Ti		x	Na ₂ SO ₄	
x	W		xxxx	Na-Wolframate	speeds up the deglassing
x	Zn		xxx	Nitrate	
Oxide			xx	Platinum ammonium chloride	900°C plus
			xxx	ZnCl ₂	
xx	AL ₂ O ₃	1200°C plus	xx	Zn-Phosphate	200°C, weak reaction 1000°C, strong reaction
xx	BaO	900°C plus	xx	Zn-Silicate	1000°C plus
xx	CaO	1000°C plus			
xx	CuO	950°C plus			
xx	Fe-Oxide	950°C plus			
xx	MgO	950°C plus			
xxx	PbO				
xx	ZbO	800°C plus			
xx	Basic Oxides	800°C plus speeds up the deglassing			

Quartz glass wool

Quartz glass wool- bulk					
Name / Order-No.	Fiber thickness	Dimensions	Weight g	~ Density kg/m ³	~ Volume dm ³
0000124/1	5-30 µm	(Bag)	10	1	10
0000124/2	5-30 µm	(Bag)	50	1	50
0000124	5-30 µm	(Bag)	100	1	100
0000124/3	5-30 µm	(Bag)	250	1	250
0000124/4	5-30 µm	(Bag)	500	1	500
0000124/5	5-30 µm	(Bag)	1000	1	1000
0000124/6	8 µm	(Bag)	227	1	227
0000124/7	15 µm	(Bag)	227	1	227
Quartz glass wool- mat					
Name / Order-No.	Fiber thickness	Dimensions	Weight g	~ Density kg/m ³	~ Volume dm ³
0000124/10	5-30 µm	1,42 x 1 x 0,05 m	500	7	70
0000124/11	5-30 µm	2,85 x 1 x 0,05 m	1000	7	140
0000124/12	9-12 µm	2,80 x 0,305 x 0,005 m	43	15	3
9788546	9-12 µm	0,455 x 0,317 x 0,005 m	15,6	15	1