Fused Quartz Material

When naturally occuring crystalline silica (sand or rock) is melted using a flame fused method or electrically fused method it is simply called fused quartz.
Fused quartz can come in a clear or opaque form. Fused quartz material is ideal for processes requiring high temperature production, high purity applications and maintains a specific wavelength transmission. This combination of characteristics makes fused quartz ideal for the semiconductor, scientific, and other industries. Also, fused quartz material's high purity qualities create a low contamination environment.

Typical Trace Element Composition by Material Type

Standard Purity (ppm by weight)

Element	*GE 214	*GE 124	Tosoh N	Tosoh OP1	HSQ 100	HSQ 300	OM 100	OSC2	TSC3	QSIL
Al	14	14	8	8	15	15	15	8	15	15
Ca	0.4	0.4	0.6	0.7	0.5	0.5	1.2	0.6	0.5	0.8
Cr	<0.05	<0.05			<0.05	<0.05	<0.01	0.01	<0.01	
Cu	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	0.03	<0.01	
Fe	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.3
K	0.6	0.6	0.1	0.3	0.4	0.4	0.4	0.2	0.2	0.9
Li	0.6	0.6	<0.01	0.07	0.6	0.6	0.6	0.2	0.2	0.7
Mn	<0.05	<0.05			<0.05	<0.05	<0.03	<0.01	0.01	
Na	0.7	0.7	0.6	0.5	0.3	0.3	0.2	0.6	0.1	0.9
Ti	1.1	1.1			1.1	1.1	1.2	1.5	1.3	1.4
Zr	0.8	0.8			0.7	0.7	0.8	0.8	1.3	
OH	<5	<5	200	160	<30	<30		200	170	15-45
Mg	0.1	0.1	0.04	0.04	0.05	0.05	0.05	0.04		

Analysis via direct reading spectrometer Manufacturers data of fused quartz
*Momentive Performance Materials formerly GE Quartz

High Purity (ppm by weight)

Element	*GE 224	*GE 144	Tosoh OP3	HSQ 300	HSQ 700	OM 100	TSC4
Al	14	8	7	15	15	15	8
Ca	0.4	0.6	0.6	0.5	0.5	1.2	0.4
Cr	<0.05	<0.05		<0.05	<0.05	<0.01	<0.01
Cu	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.01
Fe	0.2	0.2	0.07	0.1	0.1	0.2	0.2
K	0.2	0.2	0.3	0.4	0.1	0.4	0.05
Li	0.001	<0.2	0.07	0.6	0.05	0.6	0.2
Mn	<0.05	<0.03		<0.05	<0.05	<0.03	0.01
Na	<0.1	<0.2	0.06	0.3	0.05	0.2	<0.08
Ti	1.1	1.4		1.1	1.1	1.2	1.5
Zr	0.8	0.3		0.7	0.7	0.8	0.5
OH	10	<5	160	<30	<30		170
Mg	0.1	<0.1	0.02	0.05	0.05	0.05	

Synthetic fused silica available upon request.
*Momentive Performance Materials formerly GE Quartz

Overview

Fused Quartz Material

For more extensive fused quartz properties such as thermal, optical, electrical, and mechanical, visit each manufacturers web page (see below)

Manufacturer	Type	Desc.	Mfg. Style	CFQ/OPQ
*Momentive Performance Materials www.momentive.com	214	Tubing/Rod	Electrically Fused	Clear
	224	Tubing/Rod	Electrically Fused	Clear
	124	Solid	Electrically Fused	Clear
	144	Solid	Electrically Fused	Clear
Tosoh Quartz www.tosoh.com/products/qmat.htm	N	Solid	Flamed Fused	Clear
	OP-1	Solid	Flamed Fused	Opaque
	OP-3	Solid	Flamed Fused	Opaque
Heraeus Quartz www.heraeus.com	HSQ100	Tubing/Rod	Electrically Fused	Clear
	HSQ300	Tubing/Rod/Solid	Electrically Fused	Clear
	HSQ700	Tubing/Rod/Solid	Electrically Fused	Clear
	OM100	Solid		Opaque
	OSC2	Solid	Flamed Fused	Opaque
	TSC3	Solid	Flamed Fused	Clear
	TSC4	Solid	Flamed Fused	Clear
	ST10	Tubing	Electrically Fused	Clear
Qsil www.qsil.de	Cylinder	Cylinder	Flamed Fused	Clear

Other quartz manufacturers and types are available for quotation upon request.
*Formerly General Electric Quartz

Abbreviated Terms Used

Abbreviations	defined
CFQ	Clear Fused Quart
OPQ	Opaque Fused Qua
SS	304 Stainless Ste
OAL	Overall Length
ID	Inside Diameter
OD	Outside Diameter
Dim	Dimension
⟆	Standard Taper
MFG	Manufacturer
B-O-R	Ball with O-Ring Groove
ASTM	American Society Testing Materials
THK	Thickness
⟆	Sperical Joint
ppm	Parts Per Million
mm	Millimeter