OHARA®

High Quality Silica Glass

OHARA QUARTZ

VAD-based Anhydrous Synthetic Fused Silica SK-1310

SK-1310 is the anhydrous synthetic fused silica among the SK-1300 series products of VAD-based synthetic fused silica. In addition to the high reliability of heat resistance, mechanical strength, and chemical resistance maintained by SK-1300, photolytic absorption is not generated to the infrared area of 2.73 μm, because it doesn't contain hydrogenous radicals. SK-1310 products are fully renovated materials with the maximum transmission applicable to the entire ultraviolet, visible and infrared areas. The physical and chemical characteristics are prominent similar to the SK-1300 products in a broad range of applications in advanced technological industries such as semiconductors and opticals.

Applications:

1. Optical fibers
2. Optical elements for ultraviolet and infrared lenses or windows
3. All types of cells for ultraviolet or infrared transmission of entire areas of spectrophotometer
4. Electrical-discharge lamp tubing

Typical Characteristics

Typical Impurity Analysis

ppm

Element	Analytical value	Element	Analytical value
Al	<0.01	Co	<0.01
Fe	<0.01	Ni	<0.01
Ti	<0.01	P	<0.01
Ca	<0.01	B	<0.01
Mg	<0.01	Na	<0.01
Mn	<0.01	K	<0.01
Cr	<0.01	Li	<0.01
Cu	<0.01	Zr	<0.01
OH	<1	Cl	≒1000

Chemical Resistance

Solution	Treatment temperatures	&	hours	Weight loss
H_2O	95°C		45H	0.0001~0.0002mg/cm^2
1/100 N HNO_3	115°C		24H	0.005~0.01mg/cm^2
5% NaOH	100°C		10H	1.30mg/cm^2

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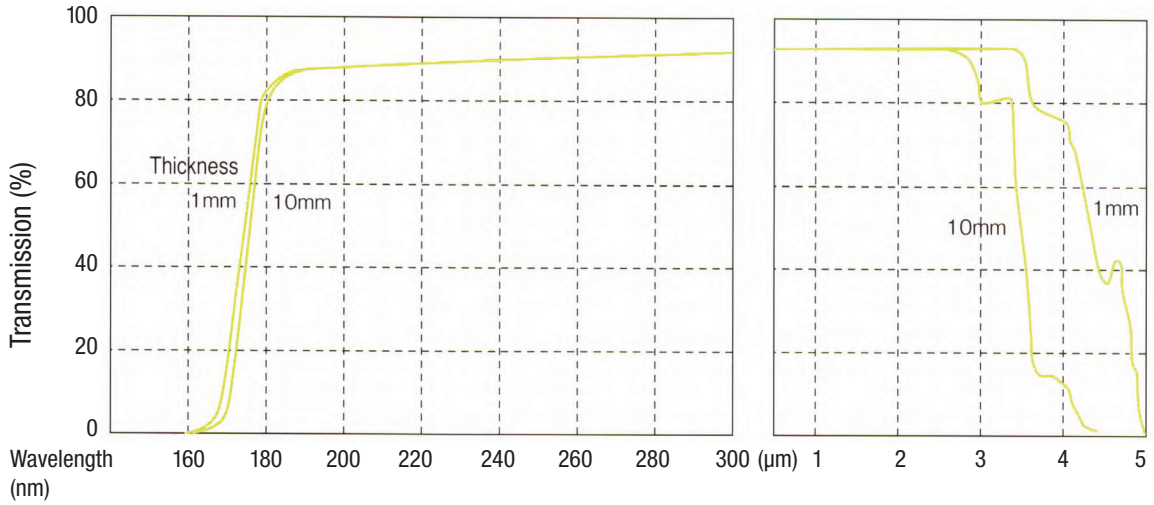
Transmission



Refractive Index

Wavelength (nm)	15°C	25°C	35°C
237.83	1.5156	1.5157	1.5158
248.20	1.5093	1.5094	1.5095
274.87	1.4967	1.4968	1.4969
334.15	1.4805	1.4806	1.4807
365.48(i)	1.4753	1.4754	1.4755
404.65(h)	1.4704	1.4705	1.4706
435.83(g)	1.4674	1.4675	1.4676
546.07(e)	1.4608	1.4609	1.4610

Optical Qualities

Item	Grade
Bubbles	0~0.03mm^2/100cm^3
Striae	Grade A in one direction (As per Mil-G-174)
Birefrengence (Strain)	10nm/cm and under

Physical Properties

Item	Unit	Value	Item	Unit	Value
Density	g/cm^3	2.20	Coefficient of thermal expansion	1/K	5.5X10^{-7}
Young's module	GPa	71.6			
Torsional rigidity	GPa	31.4	Softening point	°C	1700
Poisson's ratio		0.17	Annealing point	°C	1160
Compression strength	GPa	1.1	Strain point	°C	1060
Bending strength	MPa	69			
Tensile strength	MPa	55	Specific heat (26°C)	kJ/kg • K	0.74
Vickers hardness	GPa	8.8~10.1			

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