

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

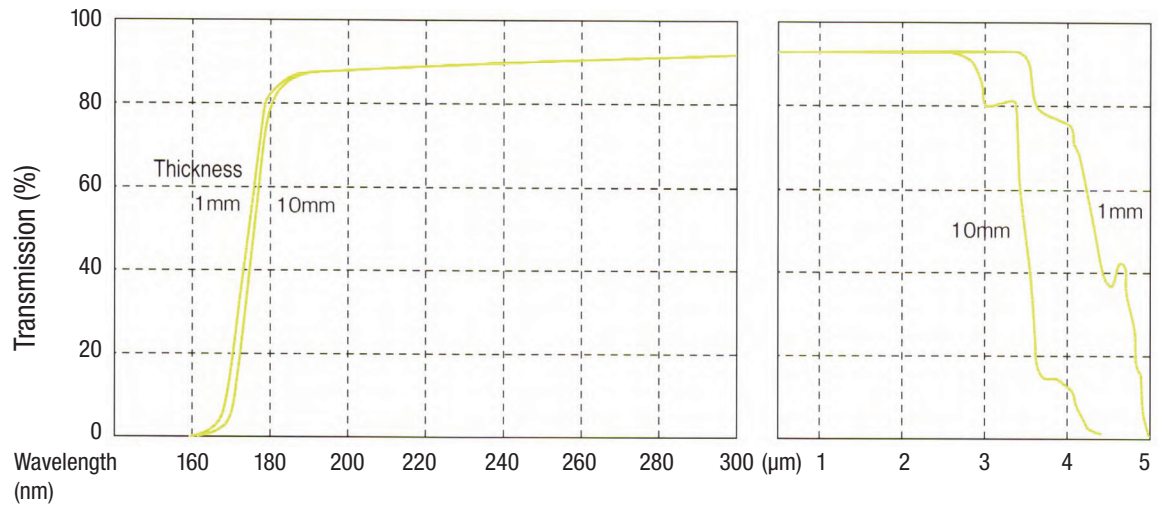
Typical Characteristics

Typical Impurity Analysis	Element		Analytical value	
	Element	Analytical value	Element	Analytical value
ppm	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 ₂ O	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

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)
Birefringence (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	5.5×10 ⁻⁷
Young's module	GPa	71.6	Softening point	°C	1700
Torsional rigidity	GPa	31.4	Annealing point	°C	1160
Poisson's ratio		0.17	Strain point	°C	1060
Compression strength	GPa	1.1	Specific heat (26°C)	kJ/kg · K	0.74
Bending strength	MPa	69			
Tensile strength	MPa	55			
Vickers hardness	GPa	8.8~10.1			