

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.

Recommended 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

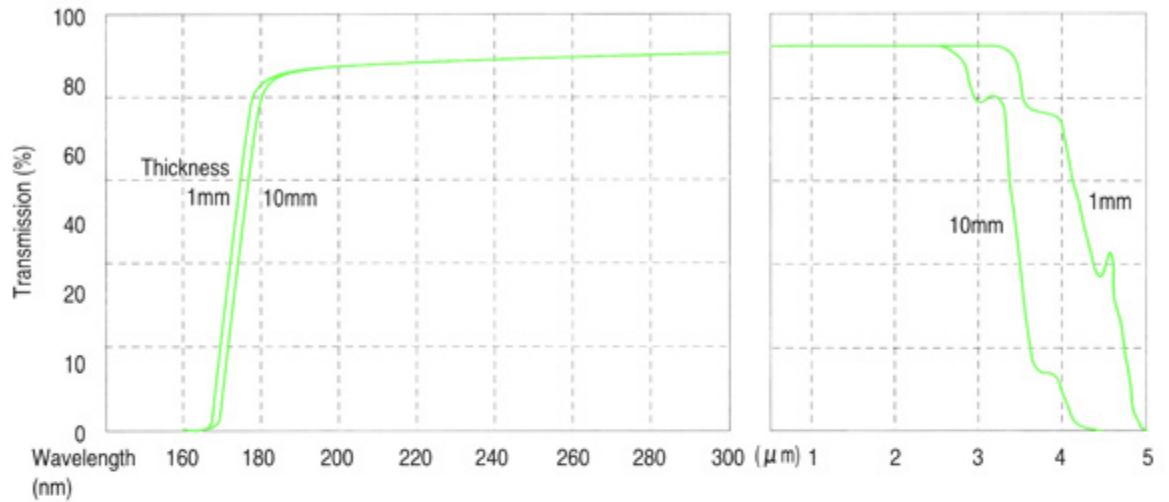
Typical Impurity Analysis

	Element	Analytical value	Limited Detection	Element	Analytical value	Limited Detection
ppm	Al	< 0.04	0.02	Co	nd	0.03
	Fe	nd	0.02	Ni	nd	0.03
	Ti	nd	0.01	P	nd	0.07
	Ca	< 0.04	0.01	B	nd	0.02
	Mg	nd	0.003	Na	nd	0.02
	Mn	nd	0.005	K	nd	0.02
	Cr	nd	0.03	Li	nd	0.02
	Cu	nd	0.03	Zr	nd	0.02
	Note: nd: Not Detected					
	OH	< 5		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	0.003~ 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	cm/cm°C	5.5 × 10 ⁻⁷
Young's module	kg/mm ²	7300	Softening point	°C	1700
Poisson's ratio		0.17	Annealing point	°C	1160
Compression strength	kg/mm ²	110	Strain point	°C	1060
Bending strength	kg/mm ²	7.0			
Tensile strength	kg/mm ²	5.6	Specific heat (26°C)	cal/g°C	0.17
Torsional rigidity	kg/mm ²	3200			
Vickers hardness	kg/mm ²	900~1030			