The Future Made Clear

OHARA

VAD-BASED ANHYDROUS SYNTHETIC FUSED SILICA

SK-1310

SK-1310 Fused Silica

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 optics.

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

		Element	Analytical Value	Element	Analytical Value
Typical Impurity Analysis	ppb	Al	<10	Co	<10
		Fe	<10	Ni	<10
		Ti	<10	P	<10
		Ca	<10	B	<10
		Mg	<10	Na	<10
		Mn	<10	K	<10
		Cr	<10	Li	<10
		Cu	<10	Zr	<10
	ppm	OH	<1	Cl	<2000

	Solution	Treatment Temperatures (°C)	Hours (H)	Weight Loss (mg/cm^2)
Chemical Resistance	H_2O	95	45	0.0001~0.0002
	1/100 N HNO_3	115	24	0.005~0.01
	5% NaOH	100	10	1.30

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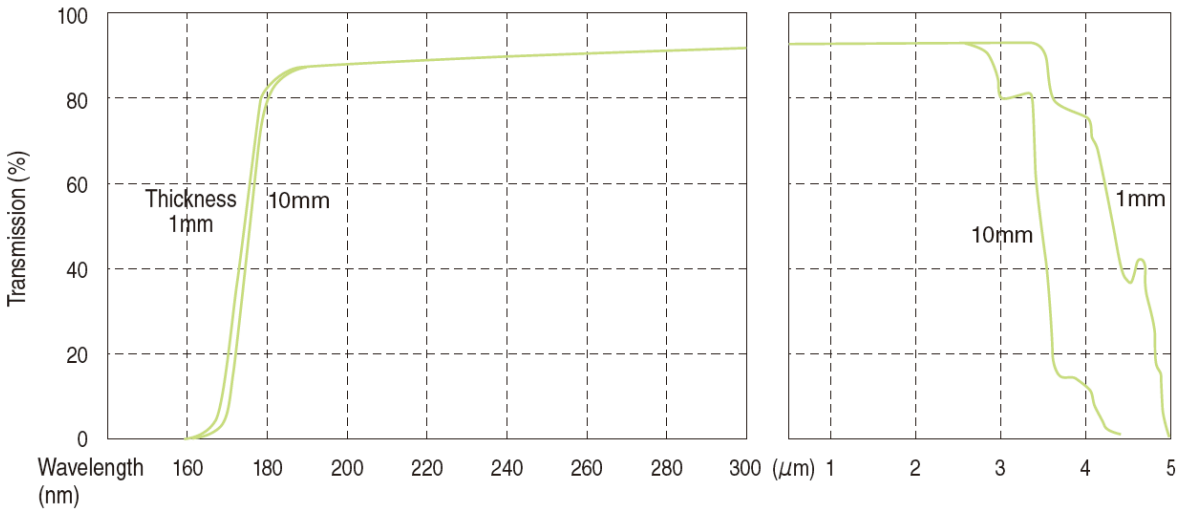
Transmission



Refractive Index

Wavelength (nm, in air)	25°C in air	20°C in air	20-5°C in air Wavelength (nm, in air)	1×10−6／°C dn/dT
365.015 (i)	1.47475	1.47469	365.015 (i)	11.5
404.656 (h)	1.46982	1.46977	404.656 (h)	11.0
435.835 (g)	1.46689	1.46684	435.835 (g)	10.7
486.133 (F)	1.46333	1.46328	486.133 (F)	10.5
546.075 (e)	1.46028	1.46023	546.075 (e)	10.2
587.562 (d)	1.45866	1.45861	587.562 (d)	10.2
656.273 (C)	1.45657	1.45652	656.273 (C)	10.2
Measuring accuracy	±5×10⁻⁶		Measuring accuracy	±0.6×10⁻⁶

Optical Qualities

Item	Grade
Bubbles	0～0.03mm²/100cm³
Striae	Grade A in one direction (As per Mil-G-174)
Birefrengence (Strain)	20nm/cm and under

Physical Properties

Item	Unit	Value	Item	Unit	Value
Density	g/cm³	2.2	Coefficient of thermal expansion	1/K	5.5×10⁻⁷
Young's module	GPa	72.5			
Torsional rigidity	GPa	31.4	Softening point	℃	1600
Poisson's ratio		0.17	Annealing point	℃	1160
Compression strength	GPa	1.1	Strain point	℃	1060
Bending strength	MPa	69			
Tensile strength	MPa	55	Specific heat (25℃)	kJ/kg·K	0.74
Vickers hardness	GPa	8.8～10.1	Thermal conductivity ratio (25℃)	W/m·K	1.3
Knoop hardness	GPa	6.4～7.0	Thermal conductivity ratio (100℃)	W/m·K	1.4

GET IN TOUCH

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