▣ Quartz Wafer Application :
• Photo mask blank • Sensors • High frequency circuit (Microwave circuit) • Biotech arrays • Laser Optics • Optical windows and lenses

▣ Quartz Wafer Feature :
• High working temperature • Good thermal conductivity • High stability • High anti corrosion • Superior mechanical properties • Stable dielectric constant & low dielectric loss • High optical transmission

▣ Purity Level 99.999 % SiO2 Quartz Wafer	
Diameter	1″ , 2" , 3" , 4", 5", 6", 8"
Thickness	100㎛ ~ 1000㎛
Surface finish	Single side or Double sides polished
Flat	One flat as SEMI. Std.
TTV	<= 20 ㎛
Surface roughness	Ra <= 100 Å

▣ Mechanical Properties	
Density	2.2 g / ㎤
Pressure-proof Intensity	1100 Mpa
Anti-curving Intensity	67 Mpa
Anti-pull Intensity	48 Mpa
Poisson's ratio	0.14 ~ 0.17
Young's modulus	72000 Mpa
Rigidity modulus	31000 Mpa
Moh's hardness	5.5 ~ 6.5
▣ Thermal Properties	
Transformation point	1120 °C
Softening point	1680 °C
Annealing point	1210 °C
Specific heat (20 ~ 350 °C)	670 J / kg °C
Thermal conductivity (20 °C)	1.4 W / m °C
Thermal expansion coefficient	5.5×10 -7 cm / cm °C
Thermal processing temperature	1700 ~ 2000 °C
Short-term operating temperature	1300 °C
Long-term operating temperature	1100 °C
▣ Electrical Properties	
Resistivity	7×10 7 ohm-cm
Insulating strength	250 ~ 400 Kv / cm
Dielectric constant e	3.7~ 3.9
Dielectric absorption coefficient.	< 4×10 4
Dielectric waste coefficient.	< 1×10 4
▣ Optical Properties	
Refractive index (@ 589 nm)	Nd =1.4584

What's the difference?	
Fused silica wafer (Synthetic silica)	Fused quartz wafer (Natural silica)
• High OH content >1200 • Excellent optical properties • Higher transmission in the UV range. • Free bubbles , inclusions and contaminants. • Very low fluorescence • Impurity 5 ppm	• Low OH content > 150 • Excellent thermal properties • Contain some bubbles , inclusions and contaminants • High fluorescence • Impurity 20 ~ 40 ppm

Optical Transmission %

Compared to fused quartz , fused silica wafer has excellent UV transmission ranging from 190 nm to 2500 nm

Wave length (nm)	Fused silica wafer (Synthetic silica)	Fused quartz wafer (Natural silica)
190	86.42	73.84
200	86.88	75.16
210	88.51	79.9
220	89.09	85.69
230	89.58	87.57
240	89.9	87.58
250	90.12	88.64
260	90.46	90.11
280	90.89	90.82
300	91.14	91.15
350	91.49	91.45
400	91.72	91.75
500	92.08	91.99
750	92.26	92.32
1000	92.52	92.48
2000	93.25	93.48
2500	91.58	93.56