Optical constants of Fused silica (fused quartz)

Malitson 1965 - n 0.21-3.71 µm

Wavelength: 1.5 µm (0.21 – 3.71)

Refractive index

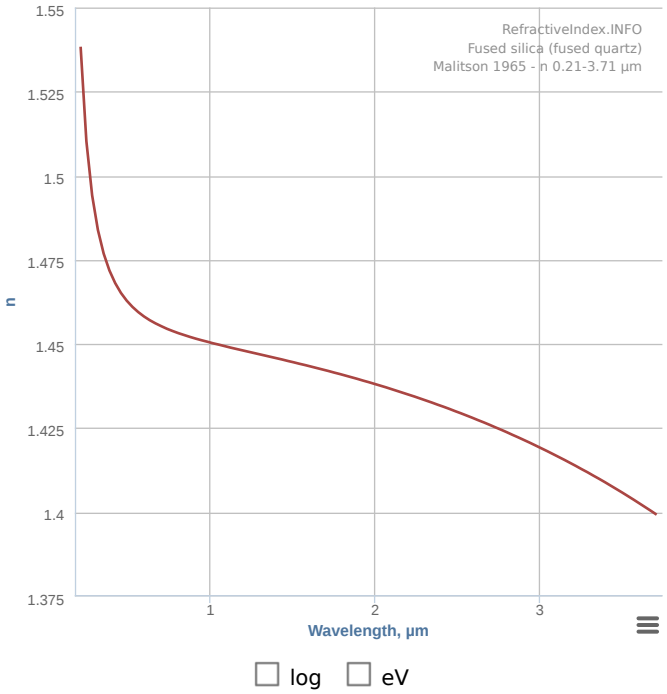
$n = 1.4446$

Other optical constants

Abbe number
$V_d = 67.82$

Chromatic dispersion
$dn/d\lambda = -0.011783\ \mu m^{-1}$

Group velocity dispersion
$GVD = -22.197\ fs^2/mm$
$D = 18.583\ ps/(nm\ km)$



Dispersion formula

$$n^2 - 1 = \frac{0.6961663\lambda^2}{\lambda^2 - 0.0684043^2} + \frac{0.4079426\lambda^2}{\lambda^2 - 0.1162414^2} + \frac{0.8974794\lambda^2}{\lambda^2 - 9.896161^2}$$

Comments

Room temperature

References

I. H. Malitson. Interspecimen Comparison of the Refractive Index of Fused Silica, *J. Opt. Soc. Am.* **55**, 1205-1208 (1965)

Reflection calculator

Angle of incidence (0~90°): 0

Direction: in out

Reflectance (at 1.5 µm)

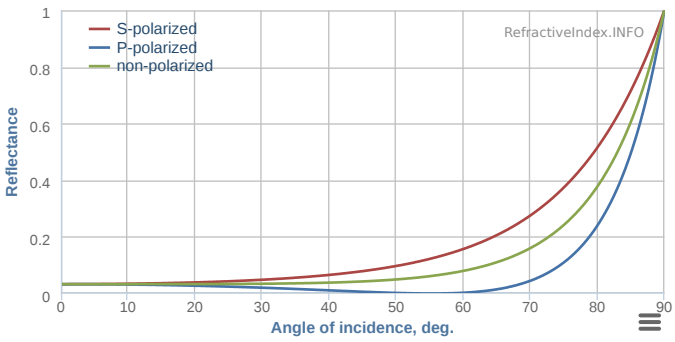
$R = 0.033079$

Reflection phase

$\phi = 180°$

Brewster's angle

$\theta_B = 55.308°$



More info - wiki

Fused silica (or **fused quartz**, or **quartz glass**) is a type of glass containing primarily silica (SiO_2) in amorphous (non-crystalline) form.

External links

- Fused quartz - Wikipedia
- IR Grade Fused Silica - ICL
- UV Grade Fused Silica - ICL
