

Quartz Slides

AGL4470, L4470-1, L4470-2, L4471

The quartz material used for our Quartz Discs, Quartz Microscope Slides, and Quartz Cover Slips is a high quality, high purity GE124 quartz. This quartz material is well documented and used in many microscopy applications.

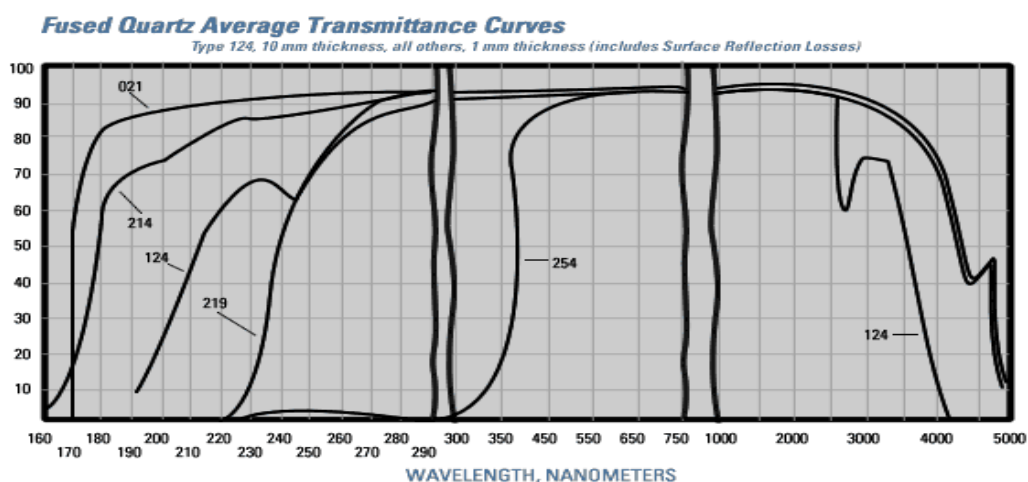
| Typical Trace Element Composition (ppm by weight) Analysis via Direct Reading Spectrometer | | | | | | | | | | | | | | | | | | | |
|---|----|--------|------|-----|-------|-------|------|-----|-----|-----|-----|-------|-----|------|------|--------|-----|-----|-----|
| Type | Al | As | B | Ca | Cd | Cr | Cu | Fe | K | Li | Mg | Mn | Na | Ni | P | Sb | Ti | Zr | *OH |
| GE 124 | 14 | <0.002 | <0.2 | 0.4 | <0.01 | <0.05 | 0.05 | 0.2 | 0.6 | 0.6 | 0.1 | <0.05 | 0.7 | <0.1 | <0.2 | <0.003 | 1.1 | 0.8 | <5 |

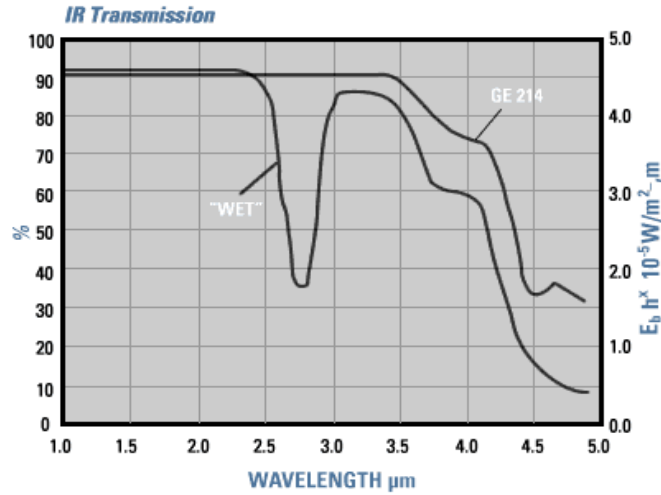
Typical Physical Properties:

| | | |
|------------------------|---|---|
| Density | : | 2.2 x 10 ³ kg/m ³ |
| Refractive index | : | 1.4585 |
| Softening point | : | 1683°C |
| Annealing point | : | 1215°C |
| Strain point | : | 1120°C |
| Hardness | : | 5.5 - 6.5 Mohs Scale |
| Compressive Strength | : | 1.1 x 10 ⁸ Pa |
| Tensile strength | : | 4.8 x 10 ⁷ Pa |
| Electrical resistivity | : | @350°C: 7 x 10 ⁷ ohm/cm |

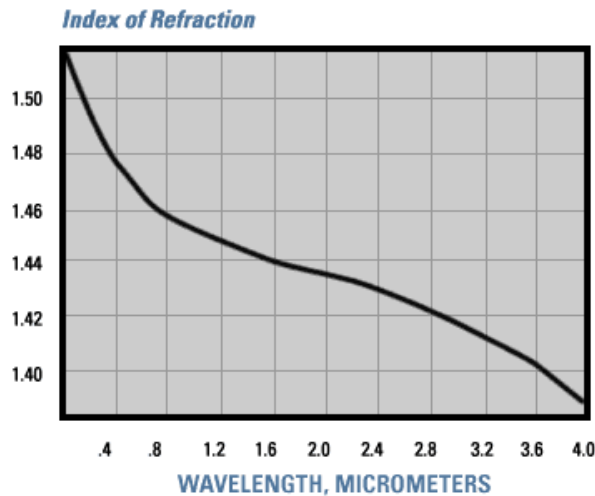
Optical Transmission

The curve shows the typical optical transmission curve with the absorption edges for GE 124 from the UV through visible into the infra-red range. In the typical 250-290nm range for UV microscopy applications the material exhibits excellent transmittance.





This chart shows how low OH⁻ content GE fused quartz transmits more energy compared to "wet" varieties of the material. The IR energy transmission of fused quartz is affected by the presence or absence of OH⁻ absorption band at 2.73µm. The overall effect is an increase in the efficiency if IR heating through the quartz.



Index of refraction of fused quartz.
 Source: *Journal of the Optical Society of America*,
 Sept. 1954.