

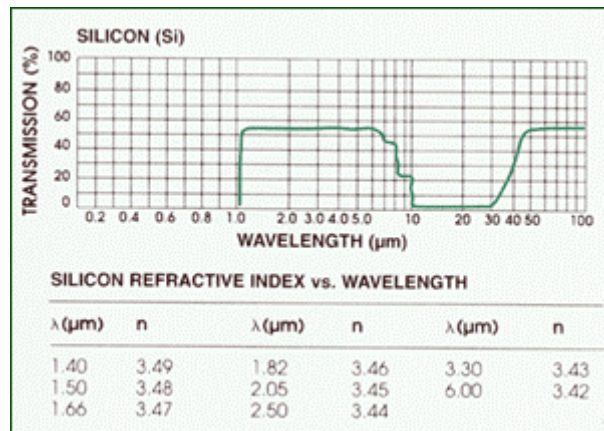
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SILICON - Si

Primarily used as optical windows in the 3-5 micron region and as a substrate for optical filters. Silicon has low density and high thermal conductivity making it an ideal material to be used for laser mirrors. Grown by two different techniques, Czochralski (CZ) which contains some oxygen which causes an absorption band. Optical quality Silicon is normally lightly doped (5 to 40 ohm cm) and because it has a high refractive index it must be anti-reflection coated in order to achieve a high optical transmission.

Transmission Range	1.2 - 15.0 μ
Crystal Structure	Diamond
Cleavage Plane	111
Colour	Metallic lustre
Density	2.329 (25°)
Melting Point (°)	1420
Reflection Loss	46.1% (10 μ) for 2 surfaces
Solubility index	Insoluble
Hardness (Knoop)	1150
Thermal Conductivity (cal/cm sec°C)	0.39 (40°C)
Thermal Expansion coefficient (/°C)	4.15x10 ⁻⁶ (10-50°C)



Whilst every effort has been made to verify the data provided, no responsibility can be accepted for its accuracy

