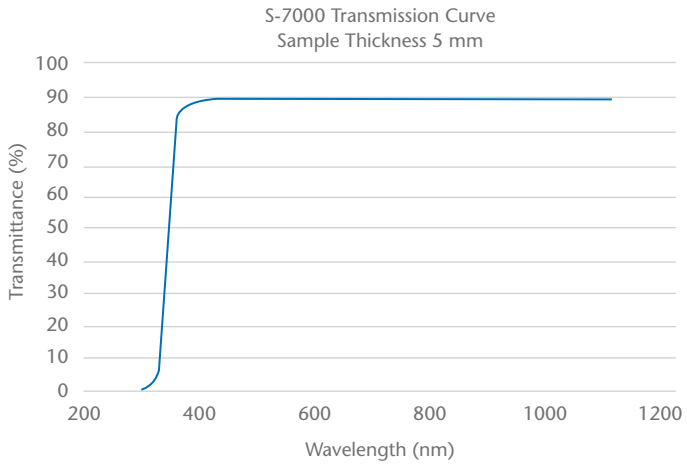
Passive Glasses Laser Cavity Materials S7010N, S7005 and S7000

S7000 is a clear, cerium-doped silicate glass used as a laser cavity material. It is also available to serve as a UV cut-off material. S7005 is a laser cavity material with 5 % doping of samarium oxide. This material is usually thicker than 6 mm. S7010N is a laser cavity material with 10 % doping of samarium oxide. This glass is recommended for most applications. SCHOTT offers a complete line of commercial filter glasses and can produce with a full range of doping levels for specific applications.

Property Sheet for S7000

Optical Properties	
n_d	1.563
v_d	55.7
$n_{1054\ nm}$	1.561
$n_{1054\ nm}$	1.552
UV Cut-off at 10% Transmission, Thickness of 5 mm [nm]	300



Physical Properties	
Density, ρ [g/cm³]	2.83
Thermal Conductivity (25°C), κ [W/m•K]	0.80
Thermal Conductivity (90°C), κ [W/m•K]	0.96
Young's Modulus, E [GPa]	78
Poisson's Ratio, ν	0.247
Thermal Expansion, $\alpha_{20\text{-}300°C}$ [10^{-7}/°C]	111
Transformation Temperature, T_g [°C]	452
Softening Point ($10^{7.6}$ poise) [°C]	598

Chemical Properties	
Weight Loss in 50°C Water [mg/(cm²•day)]	0.180
Acid Resistance SR pH = 0.3 at 25°C	1.2
Alkali Resistance AR pH = 12 at 50°C	1.0
Staining Resistance FR pH = 4.6 100 h at 25°C	1
Climatic Resistance CR Water Vapor at 40–50°C for 30 h	1–2
Samarium Content [wt% Sm_2O_3]	0

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