

## Description:

The new alkaline-earth aluminosilicate glass AF 37 is characterized by a number of exceptional physical and chemical properties. This specialty glass from Schott is alkali and arsenic free in synthesis, and has a high chemical durability. AF 37 offers a high heat resistivity, resulting from the low coefficient of thermal expansion. It features a low shrinkage which is of great importance to many electronics and display applications. AF 37 thin glass material is made by using advanced float glass technology. It profits from all advantages of this manufacturing process. Therefore even the natural surfaces of AF 37 show good flatness and low micro roughness. Often the material can be utilized without additional mechanical polishing, resulting in significant cost savings to the user. AF 37 glass has a low thickness tolerance, a good TTV (total thickness variation) and is even available in large dimensions. As a result of its low density, AF 37 is relatively light weight, which is an important advantage in display applications.

### Available Thicknesses:

Thickness	Tolerance
0.70mm	± 0.07mm

### Properties:

Refractive Index:  $n_d(\lambda=587\text{nm})$  1.52

Birefringence Constant (588nm, 21°C)  $3.18 \cdot 10^{-6} \text{ mm}^2/\text{N}$

### Thermal:

Thermal Coefficient of Expansion (20-300°C)  $3.77 \cdot 10^{-6} /\text{K}$

Strain Point ( $10^{14.5} \text{ dPa}$ ) 684°C

Annealing Point ( $10^{13} \text{ dPa}$ ) 722°C

### Chemical:

Solution	5% NaOH	NH <sub>4</sub> F:HF	HCl	DI H <sub>2</sub> O
Temp (°C)	95	23	95	95
Reaction Time (hr)	6	.33	24	24
Loss of Weight (mg/cm <sup>2</sup> )	1.30	0.68	0.44	<0.01

### Mechanical:

Density	2.48 g/cm <sup>3</sup>
Young's Modulus	78 kN/mm <sup>2</sup>
Poisson Ratio	0.24
Vickers Hardness (2N, 25sec)	640

### Electrical:

Dielectric Constant (1MHz, 25°C)	5.5
Loss Tangent (1MHz, 25°C)	0.19%
Volume Resistivity (250°C)	$10^{12.4} \Omega\text{cm}$

### Applications:

AF37 with its specific properties is exceptionally well suited for a number of display technologies and thin film coating applications, especially for liquid crystal displays such as Active Matrix LCD.

Flatness, parallelism, cutting tolerances, roughness, cosmetic defects and visual inspection all conform to the specifications to be agreed upon by Precision Glass & Optics and the customer.

