

## Description:

7059 Near-Zero Alkali baria alumina borosilicate composition was originally developed for thin film electronic circuits which require an extremely smooth substrate with special electrical properties. It has an alkali level of less than 0.3%. This is of considerable importance since alkali ions are known to be detrimental to performance, reliability and longevity of thin film devices.

## Available Thicknesses:

Thickness	Tolerance	Thickness	Tolerance
0.4mm	± 0.127mm	0.8mm	± 0.127mm
0.5mm	± 0.127mm	1.2mm	± 0.127mm

Sheet Sizes are approximately 14" x 16" or slightly larger, depending on thickness.

## Properties:

Refractive Index:  $n_d (\lambda = 589\text{nm}) = 1.5333$

## Transmission: (estimated at .5 mm thick)

@280nm	10%	@340nm	83%
@300nm	37%	@370-2400nm	90%+
@320nm	67%	@2750nm	52%

## Mechanical and Thermal:

Density	2.76 g/cm <sup>3</sup>
Young's Modulus	6.89 x 10 <sup>3</sup> kg/mm <sup>2</sup>
Thermal Coefficient of Expansion (0-300°C)	= 46 x 10 <sup>-7</sup> /°C

## Chemical:

Weathering	1
Acid Durability	4 (5% HCl @ 95°C, 24 hrs)
Classification	Thickness loss (in.)
1	<10 <sup>-6</sup>
2	10 <sup>-6</sup> to 10 <sup>-5</sup>
3	10 <sup>-5</sup> to 10 <sup>-4</sup>
4	>10 <sup>-4</sup>

## Electrical:

Dielectric Constant @ 20°C; 1 MHz	5.84
Loss Tangent @ 20°C; 1MHz	0.10%

## Applications:

7059 is often used in low alkali substrate applications. 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.

