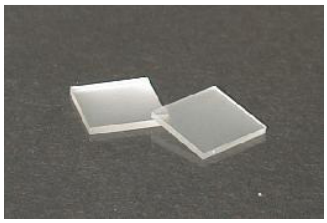
Sapphire Substrates

Sapphire (Al_2O_3) Substrates!



- Aluminum Oxide single crystal substrates
- Epi-ready
- Purity > 99.99%
- Excellent quality, free of any defect
- A, C, M, and R-planes
- Surface finish < 5-8Å, epi-side

List of various Sapphire substrates available

A-plane (1120)		M-plane (1100)	
Size	**Polish**	**Size**	**Polish**
10 x 10 x 0.5mm	**One side**	**10 x 10 x 0.5mm**	**One side**
10 x 10 x 0.5mm	**Both sides**	**10 x 10 x 0.5mm**	**Both sides**
0.5″ x 0.5″ x 0.5mm	One side	0.5″ x 0.5″ x 0.5mm	One side
0.5″ x 0.5″ x 0.5mm	Both sides	0.5″ x 0.5″ x 0.5mm	Both sides
2″ dia x 0.5mm	One side	2″ dia x 0.5mm	One side
2″ dia x 0.5mm	Both sides	2″ dia x 0.5mm	Both sides
C-plane (0001)		**R-plane (1102)**	
10 x 10 x 0.5mm	**One side**	**10 x 10 x 0.5mm**	**One side**
10 x 10 x 0.5mm	**Both sides**	**10 x 10 x 0.5mm**	**Both sides**
0.5″ x 0.5″ x 0.5mm	One side	0.5″ x 0.5″ x 0.5mm	One side
0.5″ x 0.5″ x 0.5mm	Both sides	0.5″ x 0.5″ x 0.5mm	Both sides
1″ dia x 0.5mm	One side	2″ dia x 0.5mm	One side
1″ dia x 0.5mm	Both sides	2″ dia x 0.5mm	Both sides
Other sizes in C-plane may be available. Minimum quantity may apply.			

Typical Properties	
Crystal Structure	Hexagonal a =4.758 Å c= 12.992 Å
Melting Point	2040ºC
Density	3.98 gm/cm^3
Hardness	9 Mohs
Dielectric Constant	~ 9.4 @300K @ A axis ~ 11.58@ 300K @ C axis
Loss Tangent @ 10GHz	< 2x10^{-5} at A axis , <5 x10^{-5} at C axis
Coefficient of Thermal Expansion	7.5 x 10^{-6} /ºC
Chemical Stability	Insoluble in water, Resistant to most solvents

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