

KMSF® 1000

Low Stress Dielectric Photoresist

KMSF® 1000 is a negative tone, polyimide-based photo-dielectric for use as an ultra-low stress buffer, passivation or protective layer.

FEATURES

- Negative tone, photoimageable dielectric
- No warpage due to low shrinkage and tensile modulus
- Solvent developable
- i-Line/broadband sensitivity, 1:1 aspect ratio imaging
- Low temperature processing (< 200°C)
- Good electrical properties
- High thermal and chemical stability
- Low moisture uptake

APPLICATIONS

- Stress buffer
- Passivation and protective layers

WAFER WARPAGE COMPARISON



Standard Polyimide

Wafer size/thickness: 200 mm/50 µm
Material film thickness: 10 µm



KMSF® 1000

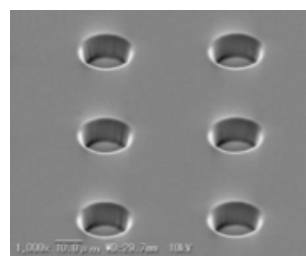
CURED FILM PROPERTIES

Property	Value	
Mechanical Properties	Young's Modulus	0.14 GPa
	Tensile Strength	37 MPa
	CTE α1 (<Tg)	140 ppm/°C
	Elongation	160%
	Residual Stress	0.2 MPa
Thermal Properties	Tg (TMA)	57°C
	5% weight loss temp. in N ₂	420°C
Electrical Properties	Volume Resistivity	1.8 x 10 ¹⁵ Ohm·cm
	Electric Strength	1.8 kV/10 µm
	Dielectric Constant, 1GHz	2.6
	Dissipation Factor, 1GHz	0.008
Water Absorption	Moisture Absorption (23°C/85% RH, 24 hours)	0.1%

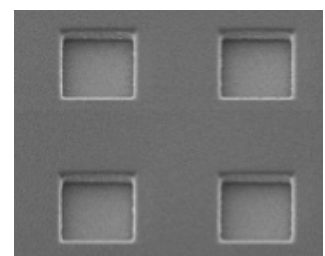
LITHOGRAPHY PROCESS

Type	Liquid negative tone
Film Thickness	~ 3 to 10 µm
Soft Bake	110°C, 10 minutes
Exposure Dose	> 400 mJ/cm ² (EVG Broadband aligner) Proximity, intensity measured at 365 nm
Development	Spray develop with KMSF® Developer 23°C, 70 rpm, 60 seconds spray, 60 seconds puddle + 60 seconds spray
Rinse	Spray rinse in KMSF® Developer 23°C, 70 rpm, 10 seconds + 2000 rpm, 15 seconds
Hard Bake	175°C, 60 minutes

10 µm FILM THICKNESS



20 µm via



50 µm via