

Durimide™ 8500-series

Photosensitive Polyimide Precursor

NMP-free, negative tone photosensitive polyimide formulation designed with a unique structure and sensitizer that gives it the following characteristics:

- High photospeed
- Enhanced resolution
- Wide process latitude
- Suitable for i-line, BB or LDI applications
- Self priming – no external adhesion promotor required
- Excellent adhesion
- High Tg

Superior mechanical property retention after extended pressure cooker test (> 1000 hour)

Cured film thickness range: 2 – 25+ µm

Grade	Viscosity	Cured Film Thickness
Durimide™ 8505	1200 cSt	2 – 5 µm
Durimide™ 8510	3300 cSt	4 – 15 µm
Durimide™ 8520	6400 cSt	11 – 25+ µm

Compatible Ancillary Products:

Developer/Rinse Combinations: HTR-D2 / RER 600

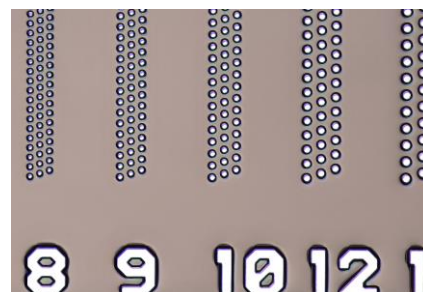
Back Side Rinse: HTR-D2

Edge Bead Remover: HTR-D2

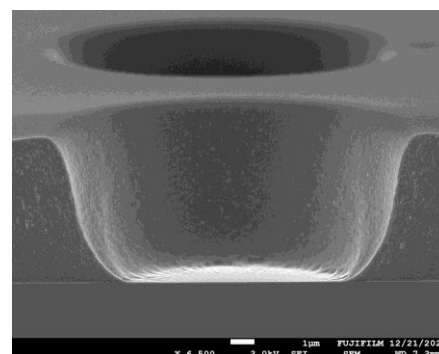
Stripper Product: MS 3001 (NMP free)

Typical cured film properties of Durimide™ 8500-series (380°C/1h)

Tensile Strength	MPa	192
Young's Modulus	GPa	2.5
Tensile Elongation	%	80
Glass Transition Temperature	°C	313
Thermal Decomposition Temperature	°C	597
Coefficient of Thermal Expansion	ppm/°C	41



Various size vias in a 12 µm softbake film, i-line stepper (404 nm Laser Microscope)



10 µm via in a 7 µm cured film (12 µm softbake film thickness), i-line stepper (SEM-image)

Durimide™ 8500-series process window

Substrate:* Silicon, SiO_xN_y, SiC, epoxy, Al, Ag...

PI Thickness: 11 to 25+ μm
Soft Bake: Depending film thickness range 100-110°C / 4-6 min

Exposure Tool: Mask aligner
Stepper
BB
i-line
g-line
h-line
LDI 405 nm

Exp. Range: 90 - 300 mJ/cm²
Focus Range: focus into film at 1/3rd film thickness

Post Exposure Delay: 30 min @ RT
or
Post Exposure Bake: 60 sec @ 50°C

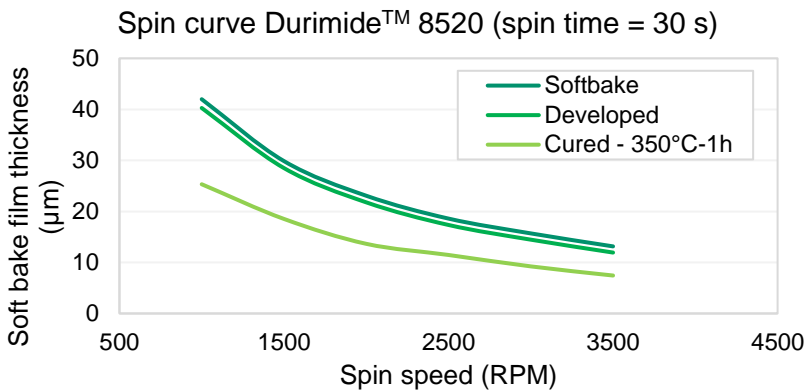
Dev. process: Atomized spray, continuous spray or multiple puddle development

Developer/Overlap/ Rinse: HTR-D2/RER 600
30"/10"/15"

Final cure conditions:
Cure temp: 350 to 420°C for 60 min

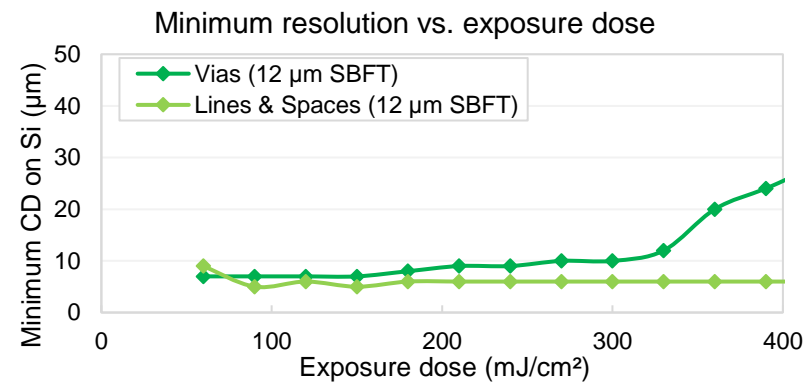
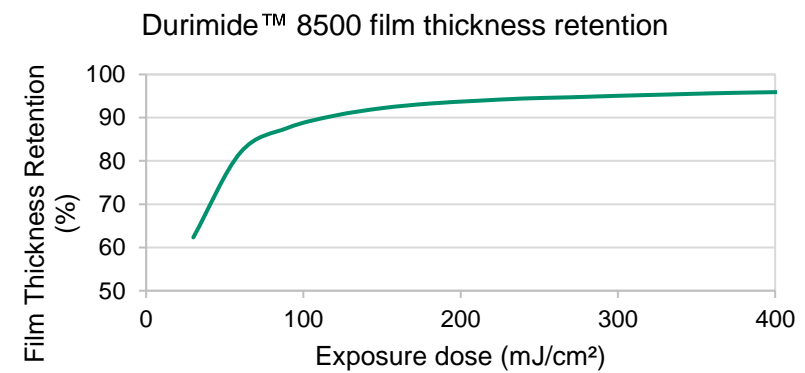
Descum: Short O₂-plasma

* Not Cu-compatible



Recommended spin time is 30-60 seconds. Film thickness can be varied by changing the spin-time and spin-speed.

Durimide™ 8500 undergoes a shrinkage of approx. 45% from soft bake to cure.



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