FUJIFILM

Durimide™ 7020

Photosensitive Polyimide Precursor

Negative tone photosensitive material for processing on broadband, g-line or h-line exposure tools.

Durimide™ 7020 has the following characteristics:

- High photospeed
- Good resolution
- Self priming – no external adhesion promotor required
- Excellent adhesion

Durimide™ 7020 has a very high Tg, making it suitable for applications with subsequent high temperature (>400°C) process steps or applications.

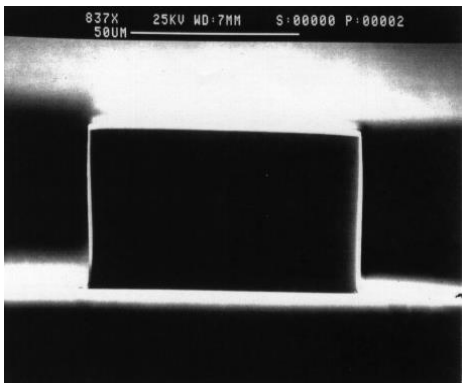
Grade	Viscosity	Cured Film Thickness
Durimide™ 7020	5500 cSt	11 – 25+ µm

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)
NMP

Via mask in 40 µm softbake film

100 µm via in 40 µm softbake film



Broadband exposure, contact print
250 mJ/cm^2

Typical cured film properties of Durimide™ 7020

Material Property	Unit	Cured at 350°C
Tensile Strength	MPa	170
Young's Modulus	GPa	2.9
Tensile Elongation	%	73
Glass Transition Temperature (Tg)	°C	> 350
Coefficient of Thermal Expansion	ppm/°C	27
Weight loss Temp (2%)	°C	433*
Weight loss Temp (5%)	°C	502*
Thermal Decomposition Temperature	°C	> 510
Dielectric Constant		3.3
Moisture Absorption @ 50% RH	%	1.3

* After cure at 380°C/ 1 hour

Durimide™ 7020 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
g-line
h-line
LDI 405 nm

Exp. Range: 200 - 600 mJ/cm²

Focus Range: 3 - 8 µm into film

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

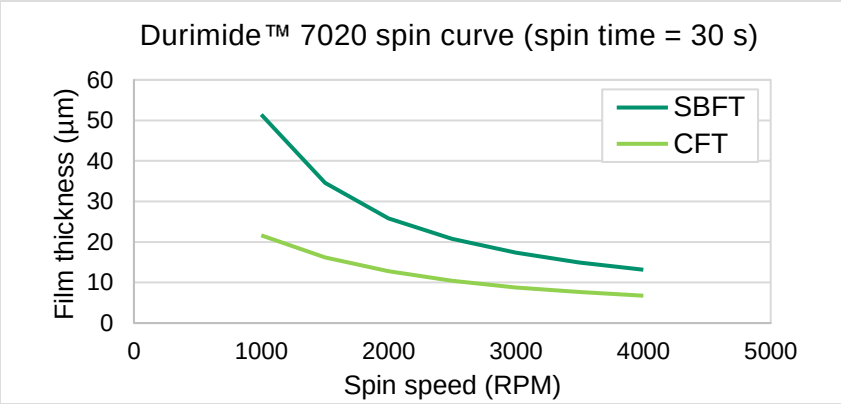
Dev. process: Atomized spray, continuous spray or multiple puddle development

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

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

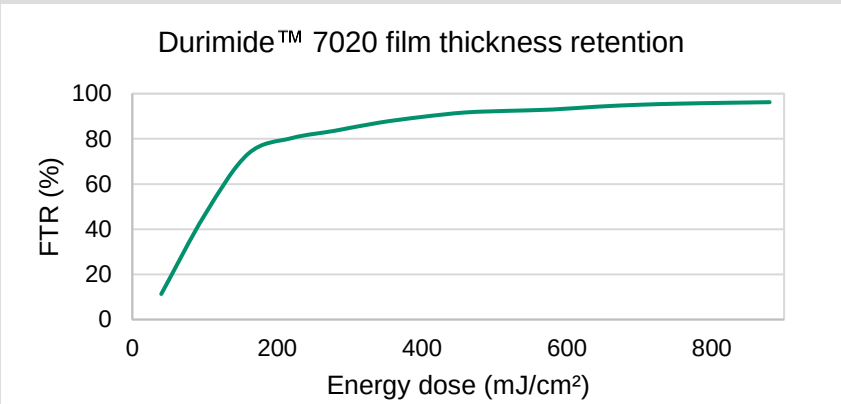
Descum:
Short O_2-plasma

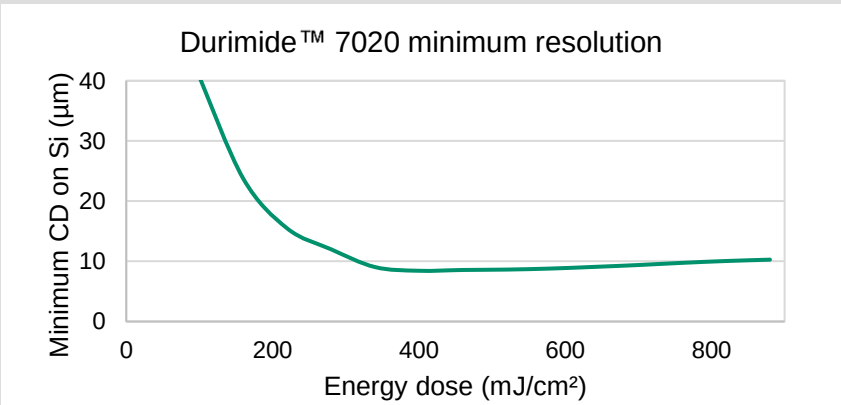
* Not Cu-compatible
** Durimide™ 7020 is not suitable for i-line or 355 nm LDI exposure



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

Durimide™ 7020 undergoes a shrinkage of approx. 45% from soft bake to cure.





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