

Low Temperature Cure LTC 9300-E76B

Photosensitive Polyimide Precursor

- NMP / NEP and Cl / Br free formulation
- LTC 9300-E76B series are suitable for low temperature cure between 180 and 250°C.
- Standard cure conditions between 350°C and 420°C can also be applied.
- LTC 9300-E76B series are designed to give the following characteristics:
 - Wide lithographic process latitude
 - Suitable for Laser Direct Imaging (LDI, 405 nm H-line) as well as I-line and broadband exposure.
 - Self priming – no external adhesion promotor
 - Excellent adhesion (incl. copper)
 - Superior chemical compatibility
 - Superior mechanical properties
 - High Tg, low CTE product

- Large cured film thickness ranges.

Type	Viscosity*	Cured Film Thickness
LTC 9310-E76B	3300 cSt	3 – 14 µm
LTC 9320-E76B	6100 cSt	7 – 25 µm

(* 1 cSt = 1 mm²/s)

Compatible Ancillary Products:

Developer/Rinse Combinations: HTR-D2 / RER 600

Back Side Rinse: HTR-D2

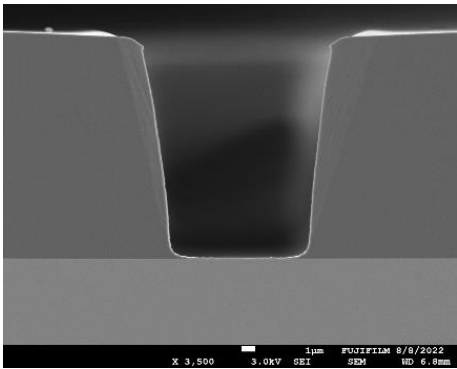
Edge Bead Remover: HTR-D2

Stripper Product: MS 3001 (NMP free)

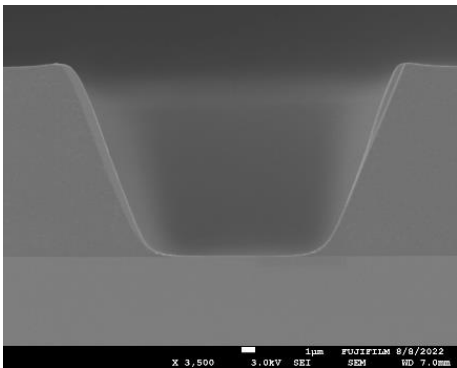
Typical cured Film Properties of LTC 9300-E76B

Material property	Unit	Cured @ 180°C	Cured @ 230°C	Cured @ 350°C
Modulus	GPa	2.9	2.7	2.5
Elongation at break	%	65	> 85	> 85
Tensile strength	MPa	175	250	255
Tg	°C	231	250	285
CTE	ppm	50	45	43
Weight loss Temp (2%)	°C	256	313	397
Weight loss Temp (5%)	°C	299	345	426

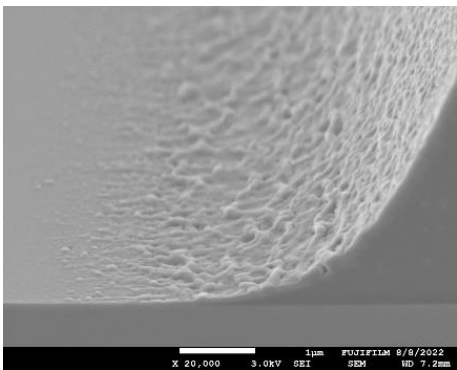
After development



After cure



Limited footing



Process Window

Substrate: All types
Silicon, SiO_xN_y,
epoxy, Al, Cu,
Ag ,...

PI Thickness: 2 to 35+ μm

Soft Bake: Depending film
thickness range
100-110°C / 4-6 min

Exposure Tool: Mask aligner
Stepper
BB or I-line
H-line
LDI 405 nm

Exp. Range: 300-700 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/Rinse: HTR-D2/RER 600

Final cure conditions:

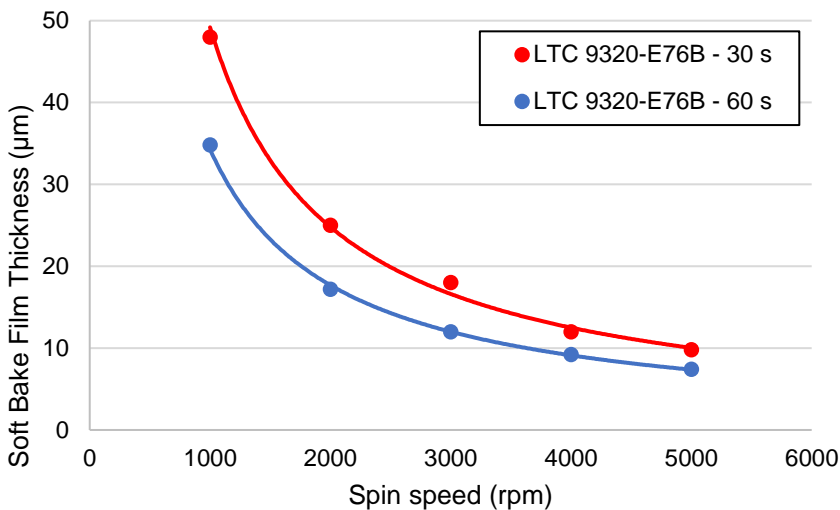
1. **Low temperature cure:**
Cure temp: 180 to 240°C for 180 min

2. **Medium temperature cure:**
Cure temp: 250 to 300°C for 90 min

3. **Standard temperature cure:**
Cure temp: 350 to 420°C for 60 min

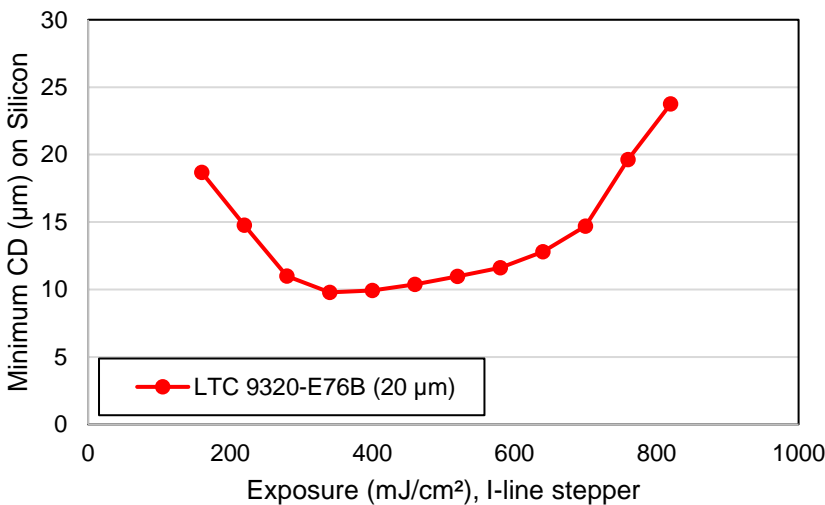
Descum:
Short O₂-plasma

Soft Bake Film Thickness vs. Spin Speed



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

Minimum Dimension vs. Exposure Dose



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