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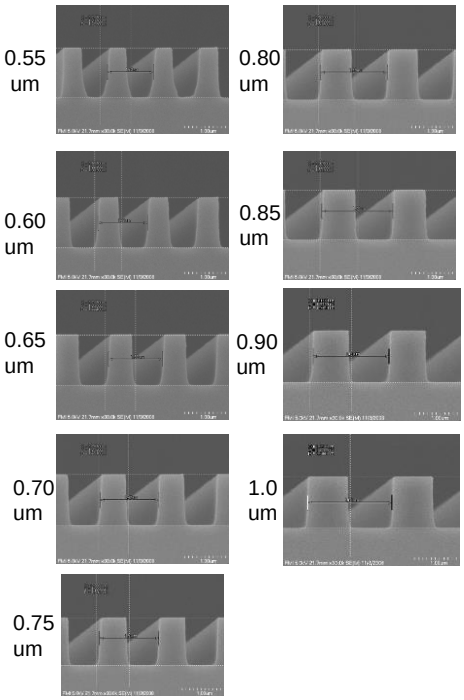
KemLab KL 5300

Positive Photoresist

Description: ***KL5300*** is a positive photoresist optimized for i-Line, g-Line, and broadband applications. KL5300 offers high sensitivity, and high throughput suitable for IC fabrication.

- Film Thickness range of 0 – 2.5 μm
- Designed for use with industry standard 0.26 N TMAH developers
- Custom formulations available

Sample Process			
Substrate	150mm Si	Exposure	NSR-1755g7a
Dehydration	NA	Thickness	1.31 μm
HMDS	100°C, 40sec	PEB	115°C, 60sec
Track	Tel Mark V	Develop	23°C, 60sec, s-puddle
SoftBake	90°C, 60sec	HB	110°C, 60sec



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Substrate

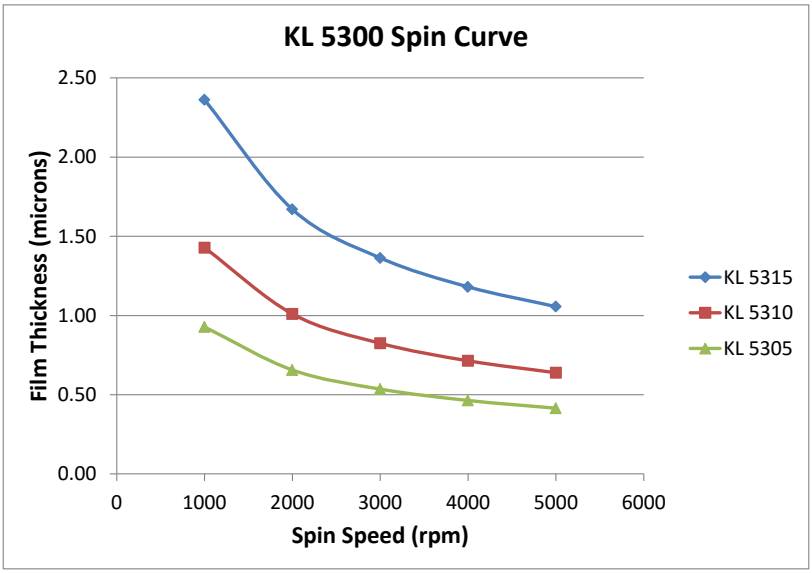
KL5300 adheres to variety of substrates; including silicon, glass, gold, aluminum, chromium and copper. It is recommended to use HMDS (hexamethyldisilazane) primer. HMDS primer will increase adhesion to most substrates.

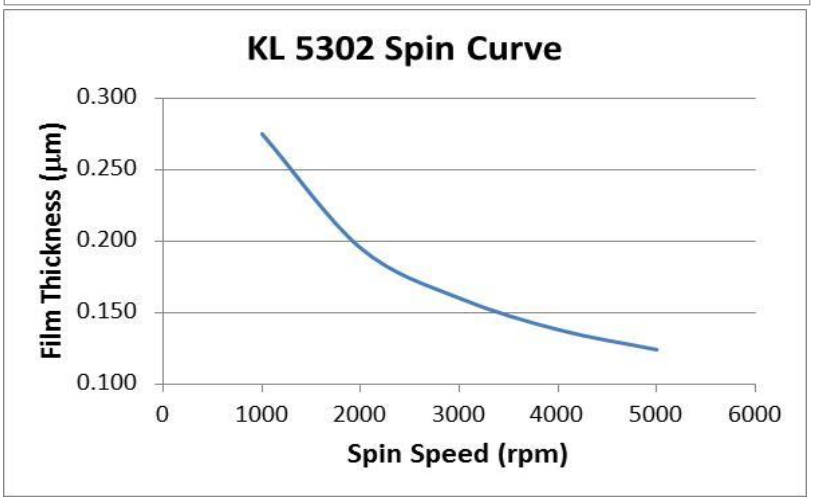
Spin Coat

Film Thickness is targeted using the spin speed curve (right). Coat program includes a 5 second spread cycle. Spin time at final speed is 45 seconds. Spin curves are determined using 6 inch Si and static dispense of approximately 3 ml of KL5300 photoresist.

For fine tuning film thickness of KL5300 and most other positive photoresists under 10 microns:

New Spin Speed = Spin Speed x (measured film thickness / desired film thickness)^2





Soft Bake

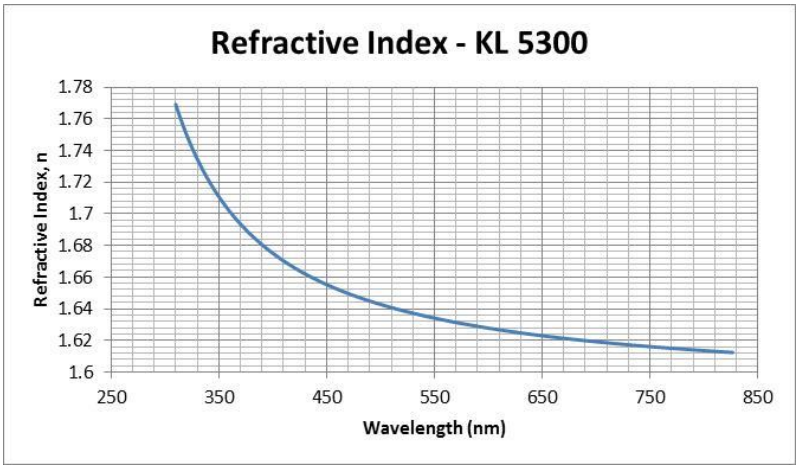
The recommended soft-bake by hotplate is 90°C - 105°C. Typical bake time is 60 seconds.

Product	Film Thickness Range (microns)	Viscosity (cst)
KL 5315	1.2 - 2.5	~15
KL 5310	0.7 - 1.9	~ 8
KL 5305	0.4 - 0.9	~ 5
KL 5302	0.15 - 0.25	~2

Exposure & Optical Parameters

KL5300 is suitable for i-Line, broadband or g-Line exposure.

Dispersion curve for Refractive Index (n) is shown below



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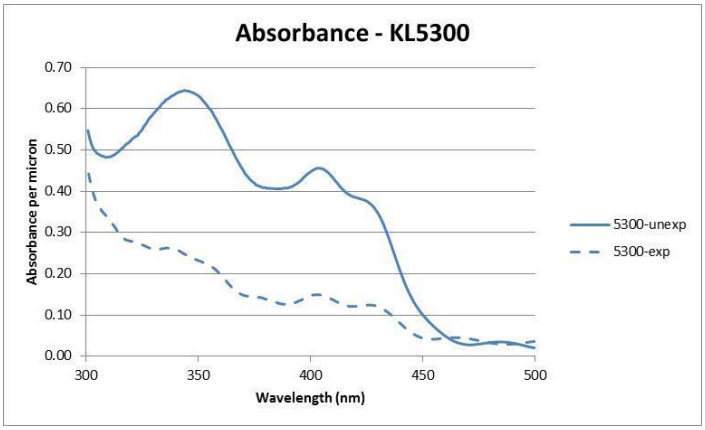
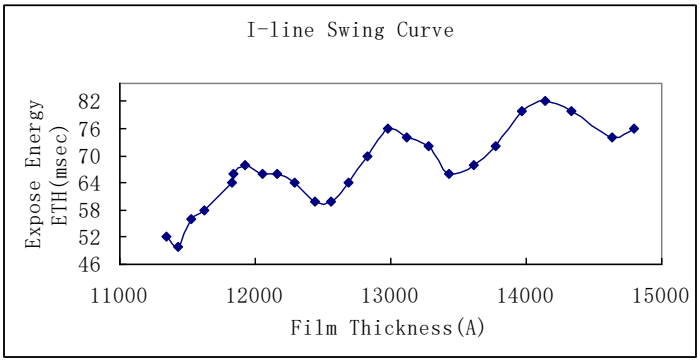
Exposure & Optical Parameters *(continued)*

Absorbance curve:





Nikon i9c i-line stepper

Post-Exposure Bake (PEB)

Bake on contact hotplate at 115°C for 60 seconds.

Develop

KL5300 is optimized for use with 0.26N TMAH developers.

Photoresist Removal

KL5300 can be removed using industry standard removers (NMP, DMSO, etc.) at 50 – 80°C.

Thicker films may benefit from using a two bath process; the first bath to remove the bulk of the resist, and the second bath to clean it off thoroughly.

Storage

Store products upright in tightly closed containers at 40-70°F (4-21°C). Keep away from oxidizers, acids, bases and sources or ignition.

Handling & Disposal Considerations

Consult the MSDS for handling and appropriate PPE. KL5300 contains a combustible liquid; keep away from ignition sources, heat, sparks and flames.

KL5300 is compatible with typical waste streams used with photoresist processing. It is the user's responsibility to dispose in accordance with all local, state, and federal regulations.