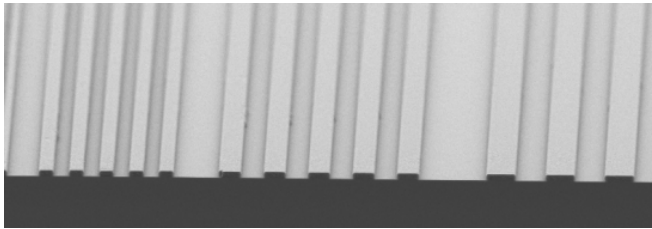


SQ MicroCoat

SU-8 Epoxy Photoresist for Thin Film Applications and Surface Protection

Film Thickness 0.05 microns (50 nm) - 2 microns

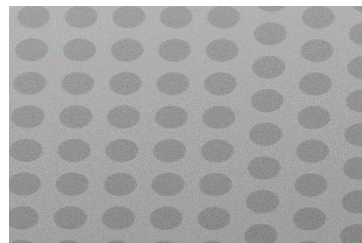


DESCRIPTION

KemLab SQ MicroCoat resists are epoxy-based negative photoresists designed for thin films, high temperatures and severe chemical applications.

SQ MicroCoat is designed for use in thin films ranging from 0.05 - 2.0 μm and are often used in permanent device applications.

Ultra-thin coatings of 50 nm fully cross-linked are achievable and used for imaged surface protection.



ADVANTAGES

- KemLab SU-8 epoxy photoresists use an epoxy resin manufactured for microelectronics with superior cleanliness and excellent lithographic reproducibility from lot-to-lot compared to SU-8 legacy products
- Minimal film loss
- Fully crosslinked at 0.05 μm (50 nm)
- Short bake times for high throughput
- Consistent surface energy of crosslinked resist
- Fully compatible with SU-8 processes

FEATURES

| | |
|-----------------|--------------------------|
| Chemistry: | SU-8 polymer epoxy |
| Tone: | Negative |
| Film Thickness: | ~ 0.05 - 2 μm |
| Sensitivity: | NUV, Broadband, i-line |
| Developer: | SQ Developer, SU-8 PGMEA |

PROCESSING GUIDELINES

| Product | Film Thickness (at 2000 rpm) | Softbake | Exposure (broadband on Si) | Post Exposure Bake (PEB) | Develop |
|-------------------|------------------------------|----------------|----------------------------|--------------------------|------------|
| SQ MicroCoat 0.05 | 0.05 μm | 95°C for 1 min | 300 mJ/cm ² | 95°C for 2 min | 30 seconds |
| SQ MicroCoat 0.10 | 0.1 μm | 95°C for 1 min | 210 mJ/cm ² | 95°C for 2 min | 30 seconds |
| SQ MicroCoat 0.25 | 0.25 μm | 95°C for 1 min | 70 mJ/cm ² | 95°C for 1 min | 30 seconds |
| SQ MicroCoat 0.50 | 0.5 μm | 95°C for 1 min | 60 mJ/cm ² | 95°C for 1 min | 30 seconds |
| SQ MicroCoat 1.0 | 1.0 μm | 95°C for 2 min | 50 mJ/cm ² | 95°C for 1 min | 30 seconds |
| SQ MicroCoat 2.0 | 2.0 μm | 95°C for 2 min | 40 mJ/cm ² | 95°C for 1 min | 30 seconds |

PROCESS FLOWCHART



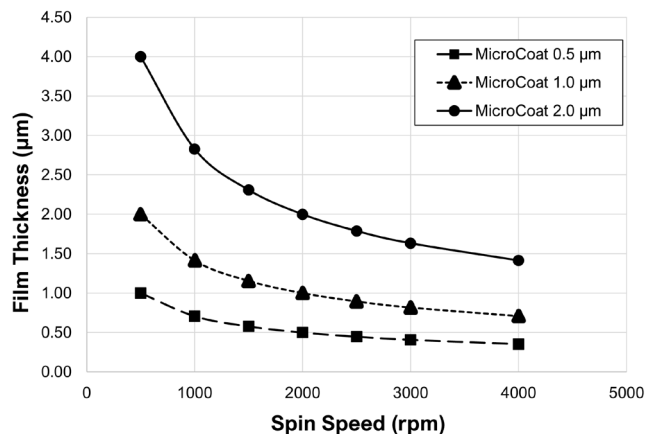
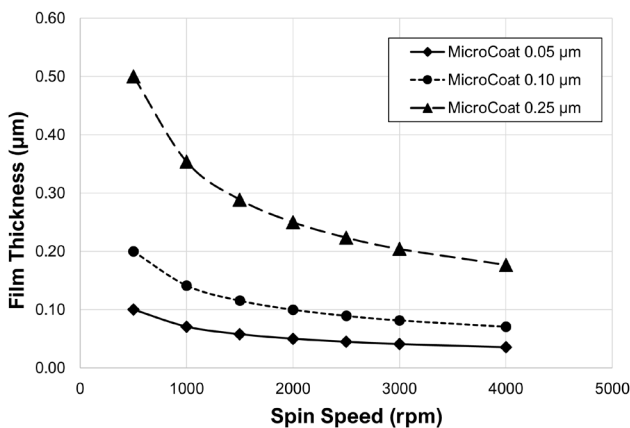
SUBSTRATE PREPARATION

SQ MicroCoat adheres to variety of substrates; including silicon, gold, aluminum, and chromium. For maximum adhesion, substrates should be clean and dry prior to applying photoresist.

COAT

Spin Coat: Film thickness is targeted using the spin speed curve shown below. The coat program uses a 5 second spread cycle. Spin time at final speed is 30 seconds.

Coat techniques such as spray coat, and other additive techniques are possible; contact techsupport@kemlab.com for more information.



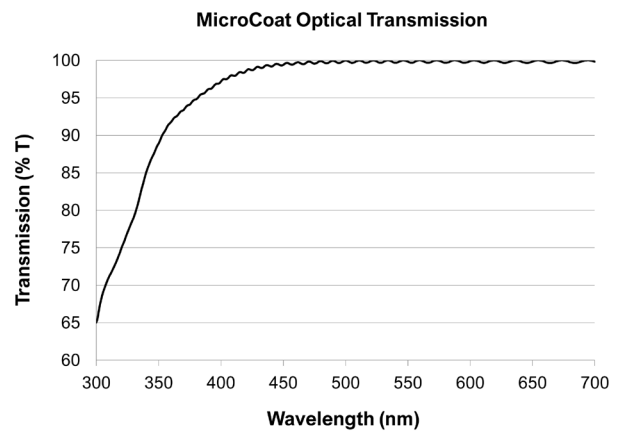
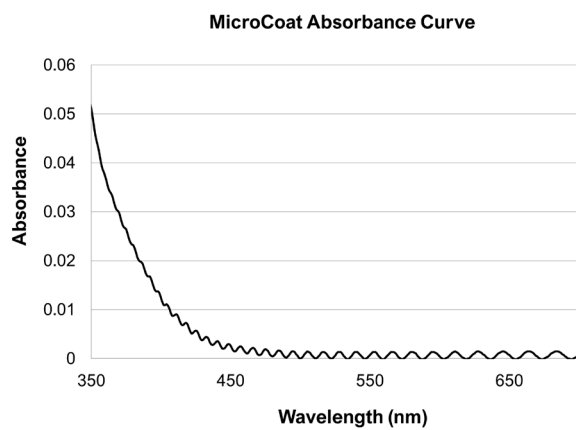
SOFTBAKE

The recommended softbake for the SQ MicroCoat utilizes a single step bake on a contact hot plate. See Process Guide for details.

EXPOSURE & OPTICAL PARAMETERS

SQ MicroCoat is designed for near UV (300-400nm) exposure wavelengths. Exposure dose will vary depending on the exposure tool set, film thickness, and process conditions.

The Process Guide shows nominal exposure doses for broadband exposure. Optical filters are not required.



POST-EXPOSURE BAKE (PEB)

Recommended PEB time is optimized to yield maximum process latitude. See Process Guide Table for details.

DEVELOP

SQ MicroCoat is designed for use with KemLab SQ Developer. Develop using immersion, puddle or spray puddle. *Optional* rinse using isopropyl alcohol (IPA) and dry as required.

See Process Guide Table for develop times.

HARDBAKE

Bake at 150°C for 5 minutes (hot plate). For permanent structures, longer bake times and temperatures above 150°C can be utilized.

STORAGE

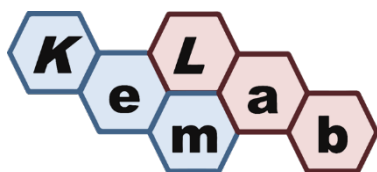
Avoid light and store in an upright airtight container at room temperature. Keep resist away from oxidizers, acids, bases and sources of ignition.

HANDLING & DISPOSAL CONSIDERATIONS

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

SQ MicroCoat materials are 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.

DISCLAIMER: The information is based on KemLab experience and is, to the best of our knowledge, accurate and true. We make no guarantee or warranty, expressed or implied, regarding the information, use, handling, storage, or possession of these products, or the application of any process described herein or the results desired, since the conditions of use and handling of these products are beyond our control.



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