MC PRL33C
Photoresist

Technical Data Sheet
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MicroChemicals GmbH
Nicolaus-Otto-Str. 39
D-89079 Ulm
Fon +49 (0) 731 977343 0
Mobil +49 (0) 177 3332453
Fax +49 (0) 731 977343 29
Email info@microchemicals.com
Internet www.microchemicals.com

General Information

The MC PRL33C is a positive photoresist for the semiconductor industry. It is based on a high quality Novolak resin and a DNQ based photo active compound. The solvent system is based on a mixture of Ethyllactate and Butyl acetate. The resist contains a blue dye for better visibility.

Coating Thickness

This technical data sheet intends to give you a guide-line for process parameters for various applications. However, the optimum values e.g. spin profile, coating method and remover depend on the individual equipment and need to be adjusted on each individual demand.

Spin coating at 4000 rpm results in a film thickness of approximately 3,9 µm.

Fields of Application

Suitable for many coating techniques

- spin coating
- dip coating
- after dilution spray coating and roller coating

Photoresist for etching and plating processes

- The MC PRL33C is resistant to most (acidic) etchants and plating solutions
- It can be used in dry etching processes as well

Processing the MC PRL33C

In chronological order:

- **Substrate preparation:** Put the substrate on the hotplate at a minimum temperature of 120 °C for 10 minutes to remove adsorbed water from the substrates surface. Alternatively, you can use a furnace at same temperature for 30 min. Of course standard HMDS procedure (only from vapor phase at an optimum substrate temperature of 110 … 150°C!) is also an adequate preparation.
- **Spin-coat** the resist after cooling down the substrates, spin at the final speed level for at least 30-40 seconds.
- **Softbake** the coated substrate at 100°C for 1 minute per micrometer on the hotplate. If you have a film thickness of 3 µm bake it for 3 min and so on. When using a furnace, 100°C for 15 min is recommended).
- **Exposure** the PRL33C is g-, h- and i-line sensitive. Typical exposure doses are 150 … 500 mJ/cm² for 2 … 10 µm resist film thickness.
- **Development** we recommend any KOH based developers like the AZ 400K (Diluted 1:4 with DI-water) or TMAH based developers
- **Hard bake** if the resist mask is used for wet-chemical etching, a hard bake at 145°C for 5 minutes will reduce the degree of under etching. After baking, the substrate should NOT be cooled down abruptly in order to avoid mechanical stress. Just putting the substrates back into the carrier (or panels into a suited frame) will be perfect.
- **Stripping** of the coating can be done with typical commercial strippers used with positive tone photoresists, e.g. AZ100 Remover, TechniStrip P1316 or acetone (followed by IPA rinse) besides many other options such as alkaline solutions or plasma ashing in oxygen plasma.
- **Resist Removal** Alkaline strippers such as "AZ® 100 Remover" or an approx. 3 % aqueous KOH- or NaOH-solution will work. Many organic solvents are also suited for photoresist removal.