



Iron Oxide Blank Processing

This basic process should be used for AZ1500 series Photoresist @ 5300 Å thickness baked at no less than 103° C for 30 minutes. These plates must be handled in yellow or red safelight conditions. The resist is sensitive to blue-ultraviolet light. It is important to keep your process at a constant temperature for consistency (70°F, 21°C). Many variables must be considered when processing your blanks, we have provided these steps to aid in the beginning of your own process.

Positive Photoresist Photoplate PROCESS		
Step	Description	
1.	EXPOSURE	The exposure must be determined empirically the first time. The wattage or light output of ultraviolet varies with various illumination sources. A good starting point with a 200 watt mercury arc source is about 4-8 seconds on a Tamarack contact printer, or 0.7-1.0 second on a Step & Repeat Camera. Make an exposure series to set up the correct exposure times and measure the resulting image dimensions to record the effect the exposure makes on the patterns.
2.	DEVELOPE	After exposure the plate will be developed in MicroChrome Developer PPD-455 for 30 Seconds. The exposed area will be dissolved. The more the resist is exposed the faster it will dissolve and the larger the exposed areas will become. When setting up a process always keep the development time a constant and vary the exposure to change critical dimensions on the plate.
3.	WASH	Wash off the developer thoroughly with either a running DI water wash for 30-60 seconds or spray.
4.	ETCH	Place plate in MicroChrome FO-100 Etchant at room temperature and agitate gently watching the exposed iron oxide areas dissolve. When the Iron Oxide has cleared; over etch it about 15% then remove it to wash.
5.	WASH	Wash the etchant off the plate thoroughly for 30-60 seconds using running DI water or spray.
6.	DRY	Dry photomask with a clean spinning dryer or blow dry.
7.	INSPECT	At this time inspect the quality of the mask and measure the critical dimension on the mask to determine if the exposure & process are giving you the results you are expecting.
8.	STRIP	Strip the mask for 5 minutes in MicroChrome Stripper PRS-100 at room temperature with gentle agitation.
9.	MASK CLEAN	Clean the mask using MicroChrome PCS-605 Photomask Cleaning Solution. Use a clean room FOAM WIPE to gently scrub the mask.



10.	FINAL WASH	Wash vigorously in a DI water wash system or spray.
11.	FINAL INSPECTION	Inspect mask for defects, critical dimensions, die alignment, etc.

For any technical questions about the process please call MicroChrome Technology @ (408) 452-5500 or visit their [web site @ www.microchrometechnology.com](http://www.microchrometechnology.com).