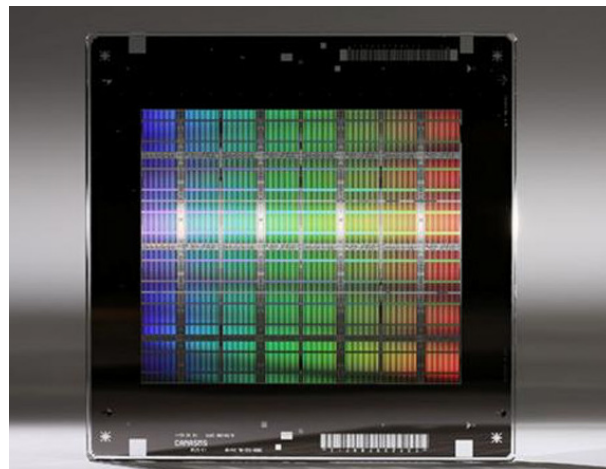


X-301 Coating for Optimal Photomask

Why Coat Photomasks with X-301?

When using a contact printing process, photoresist will often lift off the substrate and adhere to the photomask. This lift-off will create defects on the substrate. To minimize these defects, the photomask must be cleaned often. Cleaning the photomask creates excessive wear to the photomask that shortens the life of the mask and also adds unwanted time to the manufacturing process. Applying X-301 Coating to your photomasks provides a quick payback by saving time, reducing mask handling, and extending the life of each photomask.



Extending the Life of Your Photomasks

X-301 coating extends the life of your photomask by increasing the number of exposures between cleanings, making cleaning easier, and reducing resist lift-off. Less cleaning results in increased manufacturing up-time and less rework caused by defects. X-301 coated extended life masks have lower life cycle costs than uncoated masks.

X-301 Characteristics

- X-301 Coating Characteristics
- Chemical resistant fluoropolymer
- Anti-stiction, abrasion resistant
- Thickness <100nm
- Contact Angle w/water 105 degrees
- Surface Energy <15 dynes/cm
- Refractive index 1.34
- Resistant to Mask Cleaning Chemicals

Successful Experimental Results

Experimental results show that using X-301 photomask coating decreases the number of lift-off sites during hard contact printing and maintains image quality. After a series of contacts, the mask coated with X-301 produced only 4 lift-off sites. The non-coated mask produced 29 lift-off sites. X-Critical Dimension (CD) measurements taken on the duplicates from the coated and non-coated masks show that the image quality from both masters is equal. The X-301 coated photomask produced an equivalent image with less instances of photoresist lift-off.

Easy to Evaluate and Simple to Order

X-301 is available for evaluation on Photronics manufactured masks as well as customer supplied masks. Photronics works with our customers to develop appropriate coating characteristics and evaluation criteria. Ordering X-301 coating is a simple check box on the photomask ordering form which is available through www.photronics.com. Get started now - call or email using the information below.