As semiconductor geometries grow smaller, EUV lithography has been developed to successfully scale down complex patterns for the most advanced technologies. EUV lithography patterns are stored on reflective glass reticles, which are both extremely valuable, and highly vulnerable to contamination and breakage from mishandling. Learn how Entegris’ innovative pods protect and preserve these reticles throughout transport and repeated lithographic patterning, inspection, and cleaning.

**Protecting and Transporting Extreme Ultraviolet (EUV) Reticles**

**AT THE RETICLE MANUFACTURER**

After manufacturing, reticles are expected to have a shelf life of 1–2 years. This shelf life is expected to be reduced in favor of longer reticle lifetimes in semiconductor manufacturing in the presence of contamination or physical damage. Entegris’ innovative Flexure suspension system ensures reticle integrity by providing consistent force on the reticle, protecting against vibration and movement. Additionally, our scientifically engineered polymer surfaces significantly reduce the contact marks and subsequent particle generation, further protecting reticles during transport.

**IN THE SEMICONDUCTOR FAB**

At the fab, reticles must be kept ultraclean and protected between process steps as they are moved in and out of the pods many times per day.

**TRANSPORT TO FAB**

Reticles are protected from vibration and potential breakage.

**PLACE RETICLE IN METAL POD**

**PLACE METAL INNER POD IN OUTER POD**

**PLACE POD IN SECONDARY PACKAGING**

**TRANSPORT IN FAB**

**EUV EXPOSURE TRANSPORT**

The Entegris® EUV reticle pod has a flange on the top that facilitates automated transport throughout the fab.

**Purge Gas**

Purge gas is flushed into the pod to rid its interior of damaging particles.

**INSPECTION**

Within each pod, the internal pod is removed from the external pod.

**CLEANER Tool USE**

1. On the reticle, the internal pod is removed from the external pod.

2. The reticle is inspected, then cleaned.

3. The reticle is then inspected again before being removed from the internal pod.

**DOUBLe-POD PROTECTION**

**PLACE METAL INNER POD IN OUTER POD**

**PLACE POD IN SECONDARY PACKAGING**

**EUV PRINT**

EUV lithography produces the required resolution through exposure of the reflective glass reticle. The pod is then removed from the pod, and the reticle is exposed through the pod.

**Learn More**

www.entegris.com/euv

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