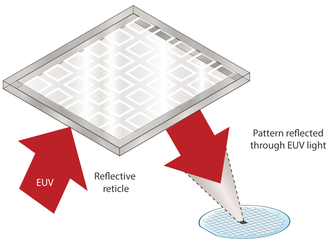
Protecting and Transporting Extreme Ultraviolet (EUV) Reticles

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.



PARTICLE CONTAMINATION

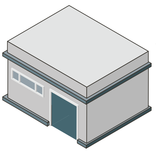
MOISTURE CONTAMINATION

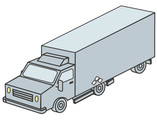
PATTERN DAMAGE OR BREAKAGE

Entegris EUV pods protect reticles during their full life cycle from damaging particles, moisture, and breakage.

AT THE RETICLE MANUFACTURER

After manufacturing, reticles are expected to have a shelf life of 1–2 years. This shelf life depends on the protective pod lasting for many years without introducing unwanted 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.



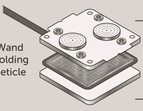


TRANSPORT TO FAB

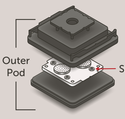
Reticles are protected from vibration and potential breakage.

DUAL-POD PROTECTION

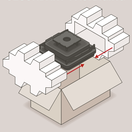
PLACE RETICLE IN METAL POD



PLACE METAL INNER POD IN OUTER POD

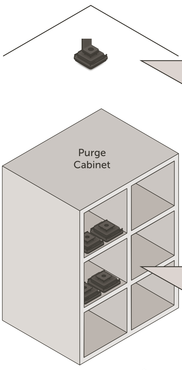


PLACE POD IN SECONDARY PACKAGING

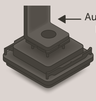


IN THE SEMICONDUCTOR FAB

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.



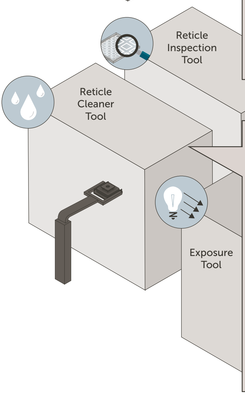
OVERHEAD TRANSPORT



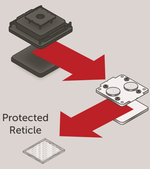
The Entegris EUV reticle pod has a flange on the top that facilitates automated transport throughout the fab.

PURGE CABINET

Purge gas is flushed into the pod to rid its interior of damaging contaminants and moisture.



TOOL USE



Within each tool, the internal pod is removed from the external pod, then the reticle is removed from the internal pod.

The Entegris EUV reticle pod ensures ultraclean, safe storage and structural integrity throughout the complete reticle life cycle.

Learn More

www.entegris.com/euv

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