PRELIMINARY

Contact Inspection

Technology:	tack roller
Material class:	urethane

Arbitrary Surface Inspection

The disposable samplers are designed to inspect surfaces that are difficult to inspect by other means, including the inner surfaces of FOUPs, process tools, and mini-enviroments, as well as wafer handlers and tracks.

Particles are captured by rolling the surface with a sampler coated with a tough, tacky polymer that leaves very low residue on the inspected surface. Captured particles on the sampler can be mapped and counted quickly with darkfield optics, and can optionally be further analyzed with other analytical techniques such as SEM and AUGER microscopy.

Steps to Inspect a Surface

1) Slide a sampler on the roller and tighten locking knob.
2) Strip off protective film.
3) Roll sampler across the test surface.
4) Remove the sampler (roll to the release stripe).
5) Inspect with darkfield optics, SEM or other analytical tool.

Sampler Available for Testing

A key to contact inspection is the tacky coating on the sampler. The coating must be tough, so that delamination occurs at the test surface interface and not in the coating. The coating must also be soft, so that it can quickly conform to the test surface and make intimate adhesive contact. The coating must have sufficient adhesion that it will bind most particle types, while not adhering immovably to high surface energy test surfaces.

Samplers and mating rollers are available to test the viability of contact inspection for a specific application.

Portable Inspection Tool Under Development

The Mycroft tool maps particles on the sampler with the sampler still engaged on the roller. A sampler can be re-used several times, since the tool records the locations and sizes of particles added with each use. The tool detects particles down to 0.3 microns polystyrene latex equivalent light scattering, and requires about 2 minutes to scan a sampler.

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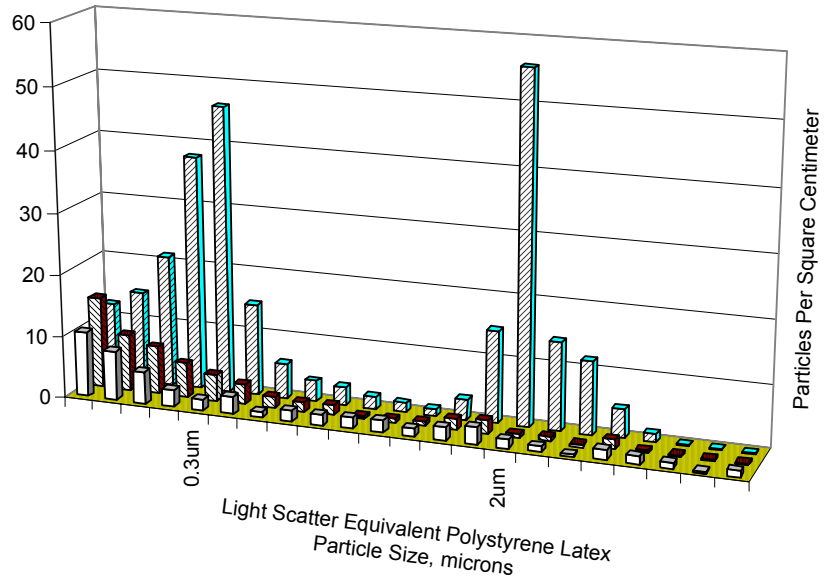
Effective Particle Removal

Light scattering measurements on native oxide silicon wafers show that a single pass by a sampler removes more than 90% of 0.3 micron and 2 micron polystyrene latex spheres.

The 33-9 material is optimized for inspecting high surface energy materials like silicon dioxide, stainless steel, and aluminum. Other formulations may be required for efficient particle removal from low surface energy materials.

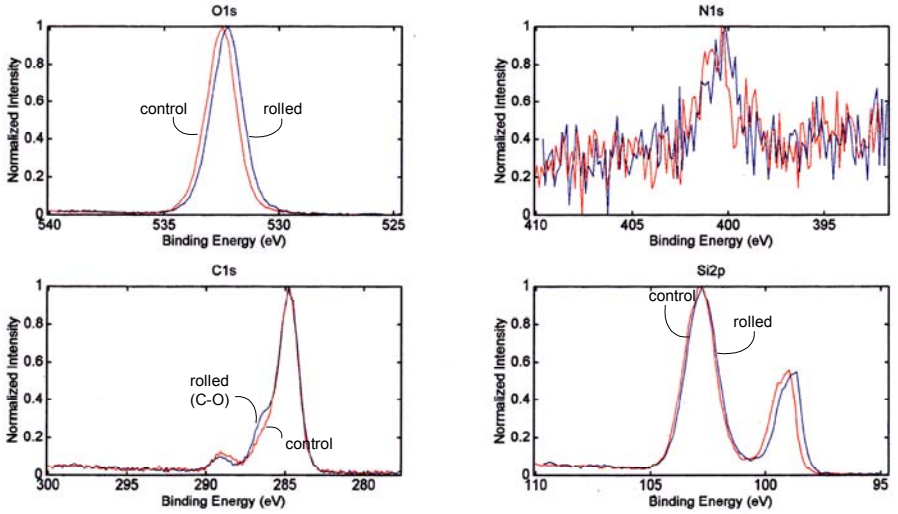


Sampler Packaging

Samplers are individually packaged in sealable containers. The strippable protective film can be re-applied to protect the sampler en-route to measurement and analysis.

Low Residue

XPS examination of clean native silicon oxide before and after application of a sampler show that rolling deposites less than 0.3 monolayers of carbon, and no detectable levels of silicones, nitrogen, fluorine, or metals.



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