Slurries

Cabot SemiSperse - SS12
This slurry designed for silicon oxide polishing is based on KOH and silicon oxide abrasive particles. The particles are in a colloidal suspension and therefore the solution does not need mixing and is ready to use straight from the container. Note that the package looks the same for the SS12 and the P1000 so be sure to use the correct container. The slurry is dispensed using the tubing in slurry pump #1 only.

Cabot SemiSperse – P1000
This slurry is designed for polysilicon damascene polishing and uses silicon oxide abrasive particles and an unknown chemical agent. It comes ready to use and is pumped straight from the bucket. To get good process results, the slurry should not come in contact with the SS12 slurry. The slurry is dispensed using the P1000 tubing in slurry pump #2 only.

Rodel MSW2000 A&B - Tungsten
The tungsten slurry consists of a chemical oxidizer (MSW2000B) that is mixed with an aluminum oxide abrasive (MSW2000A) in a 5.5:1 ratio before use. Before measuring out the abrasive (MSW2000A), mix it thoroughly using the stirrer for 10 – 15 minutes. After combining the two components, the slurry must be well mixed at all times. Allow the slurry to stir for 15 minutes or more before using. When you are finished, dispose of all the slurry into the tool drain and thoroughly rinse out the mixing containers. The slurry is dispensed using the MSW2000 tubing in slurry pump #2 only.

M8540
This slurry is designed for damascene polishing of copper and other metals in oxide. It is mixed with Hydrogen Peroxide prior to use. Stir the M8540 slurry container for 5 – 10 minutes prior to measuring. The slurry is mixed 14.8 parts M8540 to 1 part Hydrogen Peroxide by volume. Slowly add the Hydrogen Peroxide to the already measured out slurry while stirring continuously and continue to stir at a low rate during use. When you are finished, dispose of all the slurry into the tool drain and thoroughly rinse out the mixing containers. The slurry is dispensed using the M8540 tubing in slurry pump #2 only.

A7100
This slurry is designed for Aluminum damascene polishing. It is mixed with Hydrogen Peroxide prior to use. Stir the A7100 slurry container for 5 – 10 minutes prior to measuring. The slurry is mixed 9.8 parts A7100 to 1 part Hydrogen Peroxide by volume. Slowly add the Hydrogen Peroxide to the already measured out slurry while stirring continuously and continue to stir at a low rate during use. When you are finished, dispose of all the slurry into the tool drain and thoroughly rinse out the mixing containers. The slurry is dispensed using the A7100 tubing in slurry pump #2 only.

Celexis CX94S

This is a Ceria (Cesium Oxide) based slurry designed to give high oxide to nitride selectivity. It is used straight out of the container but should be well stirred prior to and during use. The slurry is dispensed using the CX94S tubing in slurry pump #2 only.

Ultra-Sol C11

This is a Ceria (Cesium Oxide) based slurry designed to give oxide to silicon (single crystal and polycrystalline). Quoted selectivities are 3:1 (SS12 for example tends to be about 1:2). The slurry should be diluted 1:1 with DI water. Mix the container of slurry for about 10 minutes prior to measuring out the material and stir the slurry for about 15 minutes prior to using and keep stirring it during use. The slurry is dispensed using the C11 tubing in slurry pump #2 only.

Ultra-Sol A12

This slurry is based on alumina (Aluminum Oxide) slurry particles and is designed for polishing hardened polymers like Polyimide and hard baked photoresists. It is ready to use out of the container. The slurry is dispensed using the A-12 tubing in slurry pump #2 only.

Ultra-Sol PMP

This is an abrasive-free chemical agent for polishing precious metals like gold, silver, and platinum. The slurry is dispensed using the PMP tubing in slurry pump #2 only.

Polishing Pads

Rodel IC1400

This is the generic polishing pad for most applications. It is a hard porous polyurethane material attached to a closed cell foam pad. The hard top surface has concentric circular grooves to assist in slurry transport to the wafer surface. The foam underpad is there to cushion the wafer during polishing and improve the polish uniformity. The hard polyurethane is designed to not deform much during the polishing to give good planarity and reduce dishing during damascene processes. Due to its hard surface, the pad needs to be conditioned using the diamond disk to keep the etch rate constant. In addition, the harder surface is less forgiving of large agglomerated slurry particles and can cause more scratches than a softer pad. It is also the most expensive pad available.

Rodel Politex Supreme

This soft black pad is designed for buffing or final polish steps. Due to it high nap, it is not good for planarization and will cause more dishing during damascene processes. It is used predominately for improving the surface finish on wafers, and usually after a damascene process. It does not need conditioning and should not be treated with the diamond disk.

Rodel SUBA 1200

This is a softer pad similar to the SUBA IV used for polishing single crystal Si wafers. The properties of this pad are somewhat in between the IC1400 and the Politex Supreme. It should only receive brush conditioning not diamond disk conditioning. Contact the tool engineer to be instructed on how to change the conditioning head.