

# EPL2361 Slurry for Copper CMP

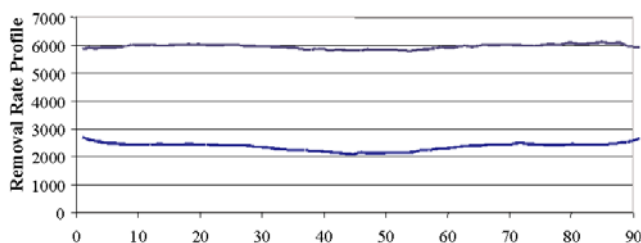
## DESCRIPTION

The EPL2361 slurry is a single component colloidal silica-based Copper CMP slurry for bulk copper removal and planarization at moderate polishing pressure. EPL2361 slurry also provides excellent clearing of copper over TaN/Ta barriers with low copper dishing and oxide erosion, low defects, and no copper corrosion.

### Physical Properties

Item	Test Method	Range
Solid content (%)	ETM008	5 ± 0.3
pH (25°C)	ETM009	4.0 – 4.5
Specific Gravity (25°C)	ETM007	1.03 ± 0.02
Viscosity (25°C)	ETM005	< 5 cps
Mean Particle Size	ETM005	< 20 nm

## P1 AND P2 RATE AND PROFILE



### Wafer Diameter Profile

(Cu Rate Qual: P1 - 3/123/117/250: P2 - 1/60/90/150)

## KEY BENEFITS

The EPL2361 slurry yields excellent planarity with high selectivity to barrier metals and oxides, low defectivity, and no corrosion. It is ideally suited for advanced semiconductors using copper interconnect with either TEOS or low-κ oxide integration that requires high copper removal rates at low polish pressure.

- Single copper slurry solution for both bulk copper planarization and copper clearing to TaN/Ta barrier with moderate dishing and erosion
- Broad process margins with very stable performance over a wide range of process conditions
- EPL2361 slurry offers outstanding planarization of bulk copper films prior to copper clearing over barrier films
- EPL2361 slurry is very effective at clearing copper over difficult planarization structures and eliminates residual copper prior to barrier removal
- Good post copper CMP surface with no corrosion
- As a colloidal silica-based copper slurry, EPL2361 slurry eliminates many of the settling problems in customer bulk chemical delivery systems

### Post Platen 2 +60 sec. Over Polish on a 100μ line



P2 Clear (65 sec.) +60 sec. O.P. (Dishing = 500Å)



creating the  
**flawless** surface

## MIXING AND DISPENSING

### Mixing

The incoming slurry abrasive is homogeneous. However, five (5) minutes of stirring at 250–500 RPM depending upon stirrer type, should be implemented to ensure complete homogeneity and redispersion of abrasive in the container due to differences in undisturbed storage time. Five additional minutes of mixing is recommended after hydrogen peroxide addition to prepare the slurry for use. Consult your local representative for detailed mixing instructions.

### Dispensing

Storage tanks and distribution piping should be constructed of engineering plastic such as polyethylene, polypropylene, or PTFE. Materials such as aluminum, copper, brass, or PVC should be avoided.

Avoid leaving slurry containers open for extended periods of time. Leaving containers open may result in drying and crystallization of the silica abrasive component, which can cause wafer scratching. Open daytanks should be humidified to prevent drying.

Rinse all transport lines, flow meters and other equipment with pH adjusted DI water after use before exposing to air so that the risk of slurry drying on or within them is minimized.

## PACKAGING

EPL2361 slurry is packaged in 20L and 200L HDPE non-returnable drums and 1040L totes.

## STORAGE

Always check the condition of containers (drums, pails, and totes) immediately upon delivery. Accept deliveries only if the shipment and records are intact and do not indicate exposure to freezing

temperatures. Shippers are responsible for damaged material until shipments are accepted. It is very difficult to hold the shipper liable for damaged material once a shipment is accepted. If material is damaged (handling or temperature exposure) the shipments should be refused, and a claim should be filed with the carrier handling the delivery.

EPL2361 slurry may degrade if exposed to temperatures below 10°C (50°F). Freezing will cause irreversible product degradation. EPL2361 slurry can be stored for up to one year from manufacture between 10–38°C (50–100°F). Maintain storage in a temperature controlled environment for best results. Avoid prolonged exposure to temperatures at either extreme.

Storage in aluminum, copper, brass, and PVC is not recommended. Storage equipment should be made of polyethylene, polypropylene, and PTFE, or other reinforced engineering plastic. Tanks, piping and handling equipment can be washed and cleaned with water to remove any deposits due to evaporation.

As a safeguard against potential slurry supply shortage, due to frozen shipments, it is suggested you build an inventory prior to the onset of the winter months. Consult your local Rohm and Haas Electronic Materials representative for recommendations when designing equipment or handling systems.

## PRECAUTIONARY NOTES

Follow all MSDS and label precautions and use good industrial safety and hygiene practices when handling or using this product. Keep this and all industrial materials away from untrained personnel.

## DISPOSAL

Dispose in accordance with all applicable regulations.

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