Suppression-based Copper Electroplating

Suppression-based Cu electroplating for super-fill of vias & trenches and high speed deposition of bumps & RDL’s.

Key Benefits:
- **Lower Cost of Ownership vs Competing Chemistries**
  - Over 2x higher through resist plating rate for bumps and redistribution layers (RDL’s)
  - Lower overburden and planarization after super-filling trenches and vias to decrease CMP slurry consumption with less dishing & erosion
- **Low Impurity Level in Cu film**
  - Organic impurity level within Cu film is below 10 ppm
  - Low stress induced voiding and resistivity due to tighter purity control
- **Optimal Surface Roughness and Texture**
  - Smooth surface morphology
  - Strong (111) texture
- **Wide Plating Process Window**
  - Stable performance with varying concentrations of plating additives

Suppression-based Cu Electroplating produces Cu bumps that are uniform in height and smoothness for processes ranging from 200 to 800 mA/cm² and plating rate of up to 10 µm/min
Suppression-based Cu Electroplating Products

- **Cu electrolytes**
  - Copper High Acid
  - Copper Low Acid

- **Plating Additives**
  - Anti-Suppressor
  - Strong Suppressor A
  - Strong Suppressor B

- **Metrology Standards**
  - LSL Electrolyte Calibration Standards
  - USL Electrolyte Calibration Standards
  - Target Electrolyte Calibration Standards
  - LSL Additive Calibration Standards
  - USL Additive Calibration Standards
  - Target Additive Calibration Standards
  - Reagents for Plating Bath Metrology

Suppression-based Cu electroplating provides near 100% planarization of wide features after super-filling of trenches & vias with low WIDNU and low WIWNU (<1.5% @ 1 Sigma)

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