Entegris

SP-100

For STI and W CMP applications

Overview

SP-100 is a cost-effective post-CMP cleaning solution that removes contaminants generated by CMP processing. It is recommended for cleaning following Shallow Trench Isolation (STI) CMP processing using ceria-based slurry. SP-100 also provides effective cleaning following W CMP processing.

Because SP-100 is formulated as an aqueous solution, it is easily diluted for use, which contributes to an overall low cost of ownership. SP-100 is a high pH formulation that provides high-performance cleaning, when applied in low concentrations. This cleaning and surface preparation product excels at organic residue removal, and also prevents watermarks.

SP-100 is available in 5-gallon and 55-gallon containers. Small sizes may be available upon request.

SP-100 Cleaning Mechanisms

- Produces a unique detergency-like action that results in exceptional cleaning of organic residue
- Incorporates metal complexing capability for effective removal of organic contamination and trace metals
- High pH chemistry creates zeta potential characteristics that enhance cleaning action and prevent brush loading
- Removes and prevents watermarks

Primary Application:

- Post-STI CMP cleans
- Post-W CMP cleans



Other Applications:

- Post-Cu CMP cleans
- CMP pad cleaning and conditioning
- Backside metal and particle removal
- Dielectric CMP cleans
- OSG film cleans
- Pre-deposition cleans
- Polysilicon cleans

Features and Benefits

- Effective for organic residue removal
- Cleans hydrophobic dielectrics without watermarks
- Removes metallic contamination from dielectric surfaces
- Prevents brush loading
- Reduces scratch defects
- Effective at ambient temperatures

Specifications

SP-100 is typically used at ambient temperature, with on-wafer dilution of ≥50:1 as follows:

Equipment*	SP-100	DI Water Rinse
Single-wafer, no contact	30–60 sec**	15–20 sec**
Single-wafer contact (scrubber)	30–40 sec	15–20 sec

** Chemical delivery system requires pressurized inert gas (N_2) blanketing.*

*** Megasonics recommended.*

Material Compatibility

High-density polyethylene (HDPE), PFA, polypropylene, 316L stainless steel, quartz, and Teflon® (PTFE), are normally suitable materials of construction. Diluted SP-100 is compatible with PVA brushes.

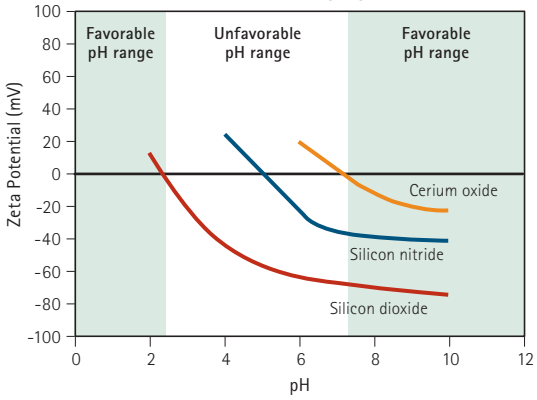
Handling and Storage

Before using this product, read the MSDS, as well as the SP-100 Instructions for Use and Evaluation document.

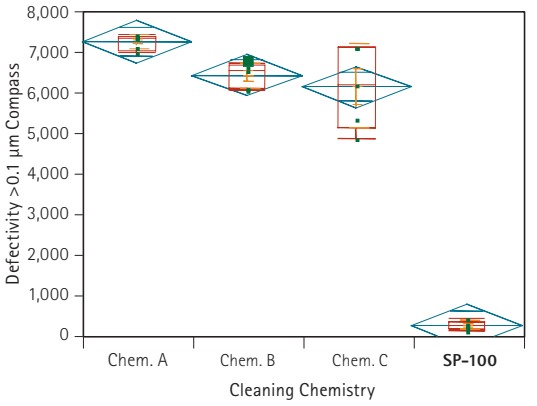
For SP-100 applications, customized recipes may be needed to meet application-specific requirements. Contact Entegris' technical personnel for assistance in adjusting process variables (time, pressure, rpm, dilution, etc.). Adjusting these variables can optimize performance and cost of ownership.

Performance Data

Zeta Potential for Surfaces in an STI Slurry System



Post-STI Cleaning Results
Ceria-based Slurry*



**Courtesy of Rohm and Haas, Inc.*

For More Information

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