DuPont Electronics & Imaging Introduces Three New Cleaning Chemistries for Advanced Semiconductor Fabrication

*DuPont’s EKC Technology Portfolio Expands with Novel Formulations for Post-CMP Cleaning and Post-Etch Residue Removal*

HAYWARD, Calif. (PRWEB) June 27, 2019 -- DuPont Electronics & Imaging today announced three new chemistries to support advanced semiconductor fabrication: DuPont™ EKC™ PCMP2110 cleaner, EKC™ PCMP3210 cleaner and EKC™ 590 CuSolve™ remover.

DuPont’s EKC Technology group develops materials for precision cleaning and surface preparation in semiconductor fabrication processes including front- and back-end-of-line wafer processes, packaging and assembly. These new expansions to the EKC cleans portfolio address a number of complex challenges associated with advanced technology node processes, where the number of process steps has increased. EKC™ PCMP2110 and EKC™ PCMP3210 are new chemistries for post-chemical mechanical planarization (CMP) cleaning, whereas EKC™ 590 CuSolve™ is a new offering for post-etch residue removal.

The most recent of the three new innovations, EKC™ PCMP2110 is formulated for emerging logic and memory CMP processes that use ceria-based slurries. At advanced nodes, cleaning after ceria CMP is challenging due to increasingly higher removal rate requirements and the small ceria particle size. EKC™ PCMP2110 provides better post-CMP (PCMP) cleaning performance than specialized cleans used in the marketplace today, while also making it possible to eliminate post wet bench commodity clean steps such as sulfuric peroxide mixture (SPM) or sulfuric acid.

EKC™ PCMP3210 is DuPont’s first offering for tungsten PCMP, designed for sub 14nm FinFet logic. Compatible with tungsten in an alkaline formulation, EKC™ PCMP3210 effectively cleans dielectric layers after CMP (such as silicon nitride and TEOS), preventing corrosion within very tight specifications. EKC™ PCMP3210 has already been adopted by a number of manufacturers at advanced nodes.

“As customers move to advanced node processes for both memory and logic, the number of CMP steps increases and it becomes even more critical to have efficient in-line cleaning,” said Douglas Holmes, EKC Business Director, DuPont Electronics & Imaging. “With the introduction of our two newest PCMP products, we can help our customers reduce overall process complexity and protect wafer yields.”

Augmenting DuPont’s post-etch removal chemistry portfolio, EKC™ 590 CuSolve™ is the first commercial post-etch cleaning product designed for use in creating copper interconnects at the 7nm node and beyond. DuPont’s removal chemistry eliminates reactive ion etch (RIE) residues and residues from the titanium nitride masks used in the etch process, while also etching aluminum nitride for subsequent copper metal filling, all in a single efficient step. EKC™ 590 is compatible with both copper and cobalt and is also backward compatible with mature technology nodes.

“With EKC™ 590, customers can remove titanium nitride hard mask and post-RIE residues, etch aluminum nitride and complete in-situ cleaning in a single quick step,” said Robert Auger, Ph.D., Removal Chemistry R&D Director, DuPont Electronics & Imaging. “We’re pleased to bring our customers a first-to-market cleaning solution for sub 7nm nodes that enables them to create highly reliable copper interconnects.”
All three new products are available globally for sampling. Interested parties should contact their account representative to learn more.

About DuPont Electronics & Imaging
DuPont Electronics & Imaging is a global supplier of materials and technologies serving the semiconductor, advanced chip packaging, circuit board, electronic and industrial finishing, display, and digital and flexographic printing industries. From advanced technology centers worldwide, teams of talented research scientists and application experts work closely with customers, providing solutions, products and technical service to enable next-generation technologies. More information about DuPont Electronics & Imaging can be found on our electronic solutions and advanced printing websites.

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