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NEWS RELEASE

DuPont Adds Boric Acid-Free Electrolytic Nickel to its Nikal™ BP Family of Plating Chemistries

Enhanced safety chemistry delivers smooth surface morphology and excellent thickness uniformity for under-bump metallization

WILMINGTON, Del., Sept. 23, 2021 – DuPont (NYSE: DD) Electronics & Industrial business ("DuPont") announced it has expanded its family of Nikal™ BP plating chemistries with the addition of Nikal™ BP BAF Ni electrolytic nickel. The new chemistry is boric acid-free, making it an enhanced safety plating option for under-bump metallization (UBM) packaging applications.

UBM is an advanced packaging process that involves creating a thin-film metal layer stack between the integrated circuit (IC) or copper pillars and the solder bumps in a flip chip package. Critical to package reliability, the stack's three key purposes are to:

- Form the electrical connection between the die and the bump
- Serve as a barrier to eliminate unwanted diffusion; and
- Create the mechanical connection between the bump and bump pad.

With a focus on sustainability, DuPont integrates safer by design and green chemistry principles into its innovation processes, hence enabling a culture of learning and collaboration to develop sustainable solutions for the future. Nikal BP BAF Ni electrolytic nickel eliminates boric acid which is commonly used as a buffering agent in conventional nickel sulfamate baths for the UBM process. The new chemistry, using an alternative buffering agent, advances DuPont's commitment to sustainability and accelerates the adoption of safer alternatives in the marketplace.

Nikal BP BAF Ni electrolytic nickel is characterized by its ability to produce low-porosity nickel deposits for wafer plating, making it particularly well suited for semiconductor wafer applications requiring low-stress nickel, solderable finishers, UBM barrier layers and bump plating. It also produces a superior basis layer for over-plating with gold, palladium, tin and tin-alloy processes on semiconductor components.

"Our plating chemistries have amassed a track record of superior performance and reliability through our continual focus on quality and innovation," said Dennis Chen, Global Business Director, Advanced Packaging Technologies, DuPont Electronics & Industrial. "At the same time, we are committed to developing technology that

incorporates sustainable concepts. We have integrated all of these aspects into this addition to our Nikal BP family."

A single, ready-to-use chemistry, Nikal BP BAF Ni is low foaming with long bath life and yields smooth surface morphology, as well as excellent thickness uniformity. It offers ease of process control with inline metrology, and its compatibility with conventional Nikal BP Ni enables simple drop-in replacement for existing users.

Formulated to meet customers' wide range of needs, DuPont's proven Nikal BP chemistries deliver uniform deposits, excellent barrier capabilities, solderability, and other characteristics essential to consistent wafer fabrication.

Interested customers should contact their account managers to learn more about the Nikal BP family of plating chemistries.

About DuPont Electronics & Industrial
DuPont Electronics & Industrial is a global supplier of new technologies and performance materials serving the semiconductor, circuit board, display, digital and flexographic printing, healthcare, aerospace, industrial and transportation 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.

About DuPont
DuPont (NYSE: DD) is a global innovation leader with technology-based materials, ingredients and solutions that help transform industries and everyday life. Our employees apply diverse science and expertise to help customers advance their best ideas and deliver essential innovations in key markets including electronics, transportation, construction, water, health and wellness, food, and worker safety. More information can be found at www.dupont.com/.

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