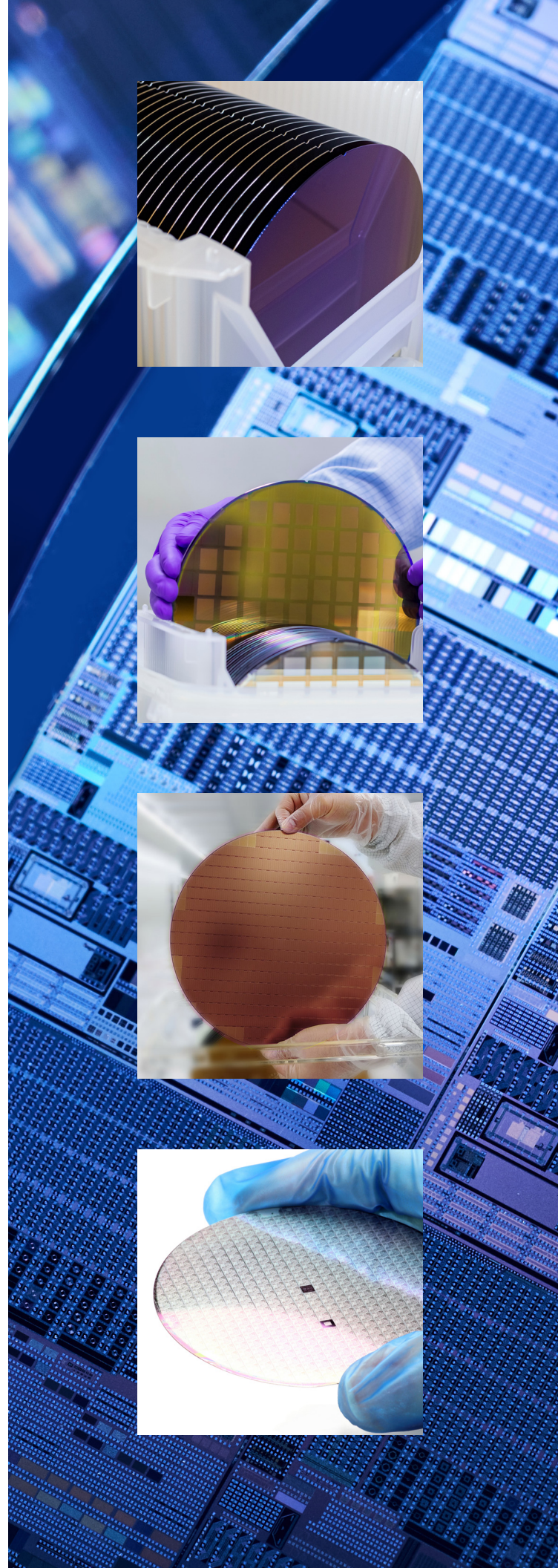




Superior Quality Process Chemistry
For Today's Semiconductor Manufacturing





Working closely with our customers to create the perfect solution

Technic, a global leader in process chemistry for over 75 years, offers a full range of products and specialized process applications to the semiconductor industry. From ultrapure front end process chemistry like etchants, cleaners, and strippers to high speed copper pillar baths for advanced packaging applications marketed under the Elevate brand name. Technic remains a reliable resource to some of the most advanced wafer manufacturing operations around the world.

Expertise for today's demands

Silicon semiconductors, compound semiconductors and glass substrates all benefit from the use of products formulated by Technic. Our goal is to offer easy to control processes that provide a performance advantage over the industry standards. Technic's highly trained Research and Development teams in the US, Europe, and Asia are constantly working to stay ahead of the status quo and offer proprietary products that provide our customers with a distinct advantage.

Working together

At Technic we place high value on the relationship we have with our customers working in partnership to ensure the right product for each application. Because of the extensive experience of our Technical Field Staff, our customers feel confident when they install a Technic product into their production lines. Our ongoing global technical support and service remains one of our highest priorities.

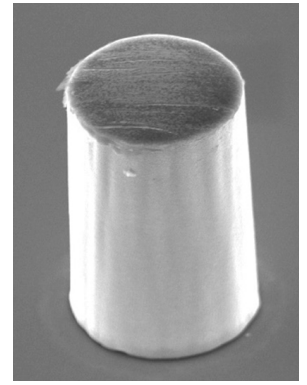
Advantages

For advanced semiconductor applications, Technic's Elevate brand includes metal plating baths, photoresist strippers and metal etchants proven to outperform the leading competition with high reliability and a number of distinct advantages.

Copper

Elevate Cu 3000

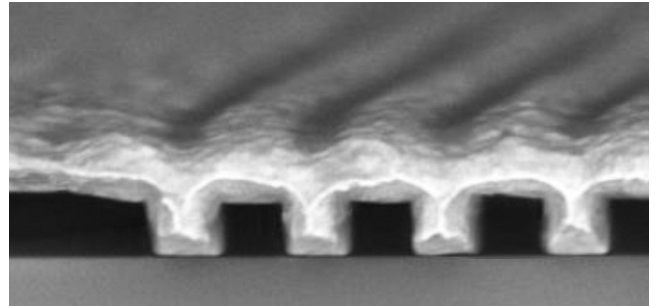
Elevate Cu 3000 is a versatile electrolytic copper plating process specifically formulated to plate various types of advanced packaging structures using the same organic system. It can successfully plate RDL patterns, copper pillars, and most other types of features required for advanced packaging. With small adjustments to the operating parameters a flat, convex, or concave feature can be achieved. All Elevate Cu 3000 organic and inorganic components are fully analyzable with Technic's Elevate Analyzer.



20-micron diameter pillar plated with Elevate Cu 3000

Elevate Cu 1500

Elevate Cu 1500 is an MSA-based copper plating process specially formulated for applications that require excellent via fill and leveling. Elevate Cu 1500 organic and inorganic components are fully analyzable with Technic's Elevate Analyzer.



High-density 2/2 RDL plated with Elevate Cu 1500

Nickel and Tin

Elevate Ni 5950

Elevate Nickel 5950 is a unique electrolytic nickel process formulated for semiconductor applications. This solution is boric acid free yet still produces similar nickel deposit attributes compared to a standard nickel plating solution.

The process can be used for UBM, metal stacking and other semiconductor technologies that utilize a nickel metal deposit. All components in the process are liquid making it ideal for use in wafer fabs.

Elevate Tin 5011

Elevate Tin 5011 is an advanced electroplating process specifically designed for semiconductor applications that require a pure tin deposit with a small grain structure such as a solder cap for copper pillars. The process provides excellent thickness distribution across the wafer from a very stable electrolyte with a wide current density range. The grain structure of the deposit is smooth, uniform, and whisker-resistant.

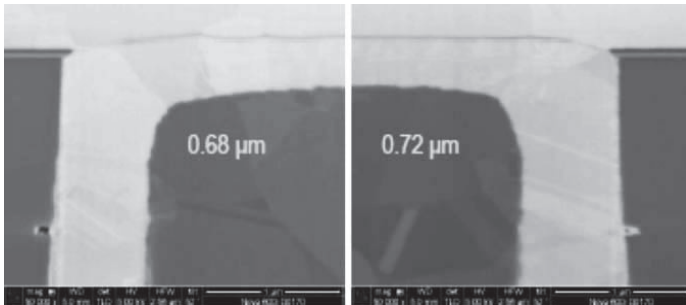
Precious Metals

Elevate Gold 7934

A cyanide based electrolytic gold plating process that produces a deposit that exhibits excellent functional performance such as wire bonding and solderability from a very stable and simple to operate solution.

Elevate Gold 7990 NBV HT

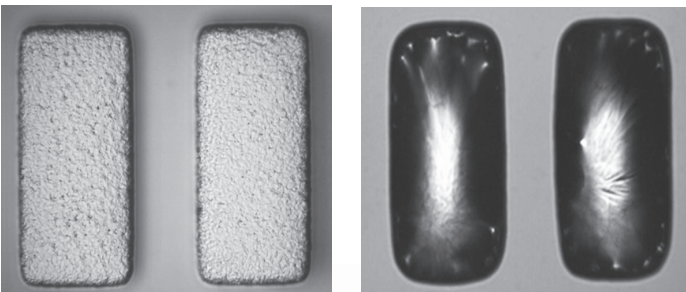
Electrolytic non-cyanide gold process that produces pure, soft gold deposits. Offers several advantages over standard sulfite gold baths including neutral pH, no metallic grain refiners, longer bath life, exceptional throwing power, and a very stable electrolyte.



Excellent surface to via plating ratio with Elevate Gold 7990 NBV

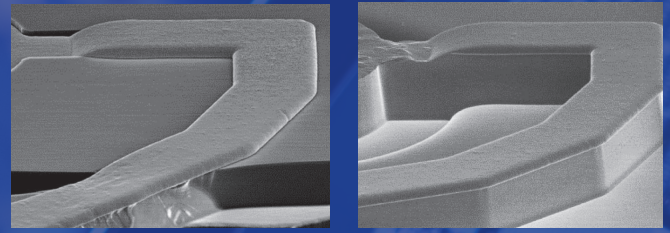
Elevate AuSn 8020

Gold-tin alloy plating process that produces alloy ranges from 75 – 82% gold content with a corresponding melting point of 280°C – 320°C. Optimum gold-tin alloys are produced from a one step, single bath process.



Elevate AuSn 8020 deposit before and after reflow

Photoresist Strippers, Etchants, and Cleaners



Az 15nXT photoresists before and after stripping.

TechniStrip® NF52

A highly effective negative tone photoresist remover commonly used for advanced packaging applications. Developed to remove laminated photoresist and liquid resins. The novel DMSO/TMAH formulation exhibits high dissolution stripping performance with excellent metal compatibility compared to standard TMAH-based blends.

TechniStrip® P1300 Series

An advanced family of photoresist strippers that address a wide range of applications from DUV to thick negative resins and passivation layer rework. Ideal for use in back-end applications like TSV, Cu pillar, bumping, etc. Complete resin dissolution of thick film photoresists such as THB151N, THB121N, AZ125XT, etc.

TechniEtch TBR38

An advanced fluoride-free aqueous formulation. Selectively dissolves titanium and titanium alloy (TiN, TiW) based barriers for far back-end of the line interconnect applications. Compatible with common UBM, and copper pillar integration materials such as Cu, Al, Ni, Sn & alloys, glass, organic substrate, etc.

TechniEtch Cu Select

Highly tunable and ultra-selective Cu metal etchant for UBM, RDL, and Cu pillar applications. Mild acidic-based metal etchant allowing excellent Cu selectivity along with high metal loading capability. Direct water rinse and low-temperature processing.

TechniClean BOS 390

Highly effective formulation for fluoropolymer removal and sidewall cleaning post-Bosch DRIE in high aspect ratios (10:1) with simultaneous stripping of both positive and negative tone photoresists. Safe alternative to fluoro-based or hydroxylamine-based solutions with excellent compatibility for integrated metals and dielectrics.

TechniClean CA25

Post Etch Residue remover designed to provide optimum balance of surface wetting, reduced potential, chelating capacity, and residue solubility to accomplish complete dissolution at low temperatures and short processing time for various electronic features such as lines, vias, and pads.

TechniClean IK73

A uniquely formulated cleaner that targets the selective removal of highly inert chemical residues created during the patterning of high-k dielectric metal oxides including hafnium, zirconium, and tantalum oxides.





About Technic

Since its inception in 1944, Technic Inc. has remained a financially strong corporation and has established a global reputation for technical excellence in the electrodeposition of precious metals. Following the expansion of our product lines through organic growth, strategic partnerships, and acquisitions, Technic has become a global leader in:

- Specialty Chemicals
- Surface Finishing Equipment
- Engineered Powder and Flake
- Analytical Control Tools

Our primary end use markets include:

- Semiconductors
- Electronic Connectors
- Photovoltaic Cell Manufacturing
- Electronic Components
- Printed Circuit Boards
- Industrial Finishing
- Decorative Applications
- Medical

Technic currently operates over 20 global facilities in 14 countries within North America, Asia, and Europe. Our Advanced Engineered Solutions approach to customer projects allows Technic to add substantial and differentiated value to the markets and customers we serve. We look forward to helping you realize the maximum potential from your new product development goals.



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