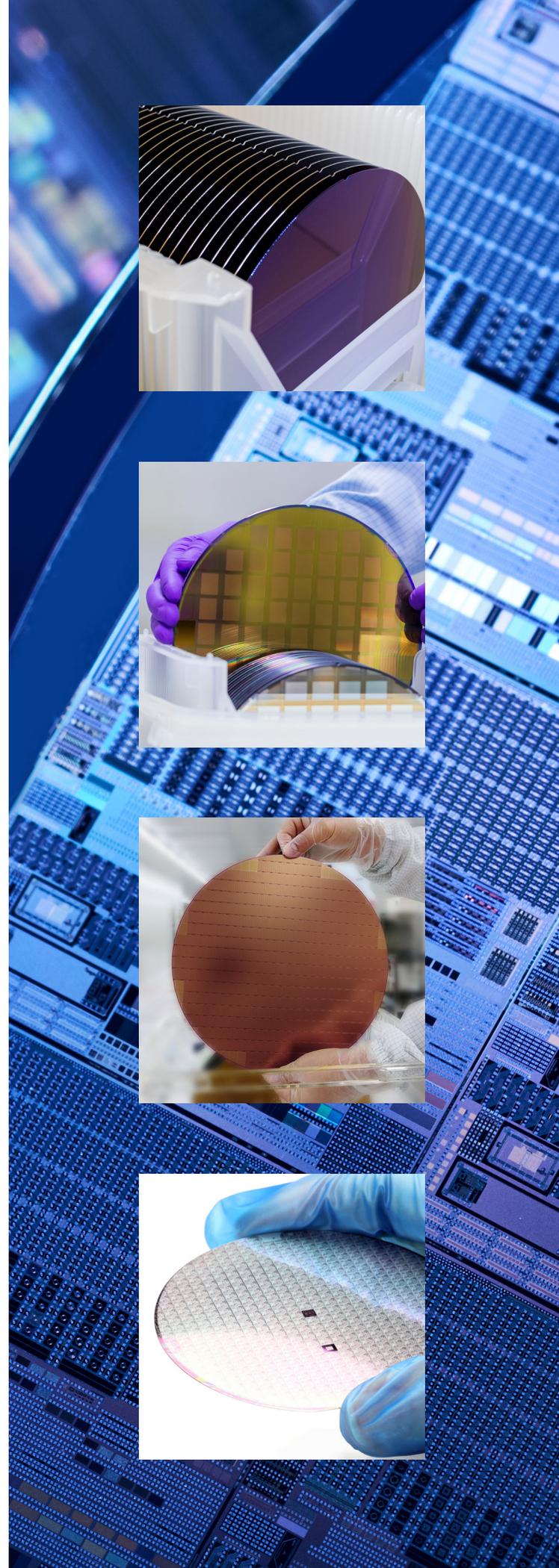




Superior Quality Process Chemistry
For Today's Semiconductor Manufacturing





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

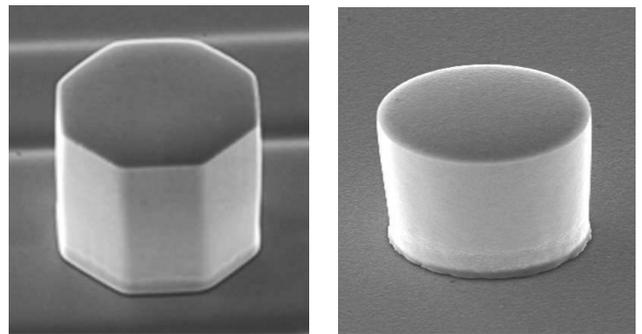
Elevate Cu 6340

Low stress copper bath that can be used for RDL and general purpose semiconductor plating. Plates at 1 – 2 microns/minute with virtually no internal stress.

Elevate Cu 6370

Elevate Cu 6370 is a copper plating process that can be used to plate a variety of advanced packaging structures including fine RDL patterns, 55 micron standard pillars, 200 micron tall mega pillars and bump on passivation features.

With small adjustments the chemistry can be used for almost all advanced packaging structures that require copper plating. Elevate Cu 6370 is easily controlled with Technic's Elevate Analyzer.



50 micron and 25 micron diameter pillars plated in Elevate Cu 6370

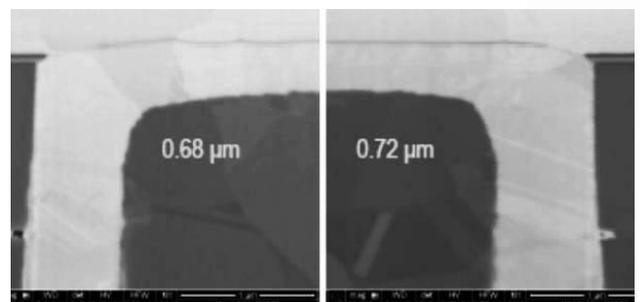
Precious Metals

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

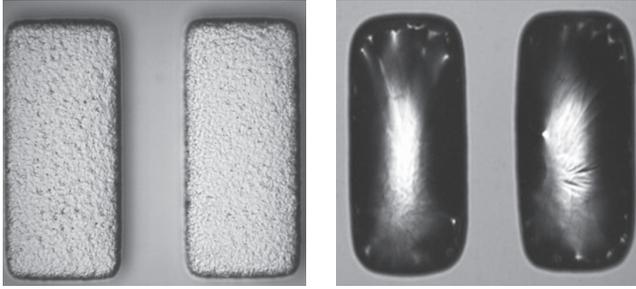
Electrolytic non-cyanide gold process that produces pure, soft gold deposits. Offers several advantages over standard sulfite gold baths including neutral pH, no metallic grain refiners, longer bath life, exceptional throwing power, and a very stable electrolyte.



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

Nickel and Indium

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.

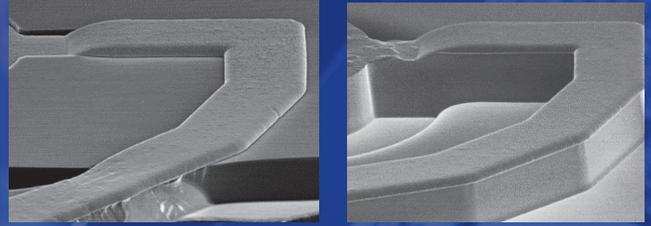
The process can be used for UBM, metal stacking and other semiconductor technologies that utilize a nickel metal deposit. All components in the process are liquid making it ideal for use in wafer fabs.

Elevate Indium 4900

Elevate Indium 4900 is an electroplating process specifically formulated to produce pure Indium deposits that are small grained and therefore ideal for bonding. Indium deposits produced with Elevate Indium 4900 demonstrate optimum adhesion when deposited on nickel, gold, or copper substrates. Elevate Indium 4900 exhibits exceptional throwing power with almost 100% efficiency. Little to no gassing occurs during the plating process, and the solution is only mildly acidic, with a pH range of 2 - 3.



Photoresist Strippers, Etchants, and Cleaners



Az 15nXT photoresists before and after stripping with TechniStrip® NI555 for 6 min @ 60°C.

TechniStrip® P1331

An advanced photoresist stripper that has a wide range of applications from DUV to thick negative resins and passivation layer reworking. Ideal for use in back end applications like TSV, Cu pillar, bumping, etc. Offers complete resin dissolution of thick film photoresist such as THB151N, THB121N, AZ125XT, etc.

TechniStrip® NF52

A highly effective negative tone photoresist remover used mainly for advanced packaging applications. Developed to remove laminated photoresist and liquid resins, the novel stripping formulation of this TMAH/DMSO chemistry exhibits high dissolution performance and excellent metal compatibility compared to standard TMAH based blends.

TechniEtch TBR19

Ti, and TiN Etchant - Barrier layer remover for WLP applications. Solution provides great process window resulting in minimal to zero undercut while etching both metals.

TechniEtch CN10

An acidic based copper metal etchant, containing particular additives that greatly enhance stability and metal loading capability in RDL (Redistribution Layer) applications, as compared to conventional oxidative acidic based solutions.

TechniEtch AC12

An Iodine based gold etchant that has been formulated to obtain high etch rates at room temperature, extended bath life, improved wetting and better stability even in the presence of metal contamination.

TechniClean CA25

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

TechniClean IK73

A specially 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.



www.technic.com



Technic World Headquarters

47 Molter Street, Cranston
Rhode Island 02910 USA
Tel: + 011 401-781-6100
Fax: + 011 401 781 2890



Technic France

15, rue de la Montjoie – B.P. 79
F-93212 La Plaine
St Denis Cedex, France
Tel: + 33 (0)1 49 46 51 00
Fax: + 33 (0)1 48 20 55 30

Technic Asia Pacific Offices

China

Technic Suzhou Office
Technic (China-HK) Limited
97# Sutong Road
Suzhou Industrial Park
Suzhou Shi, Jiang Su Sheng 215021
Tel: +86 512-6761-1098
Fax: +86 512-6762-0878

Hong Kong SAR China

Technic Hong Kong
31-39 Wo Tong Tsui Street
Block A, 10/F, Room 04
Kwai Chung, New Territories
Tel: +852 3590 8989
Fax: +852 3590 9389

Japan

Technic Japan, Inc.
Nakajima No.2 Bldg.
2-5, Nishinakajima 5-Chome
Yodogawa-Ku, Osaka 532-0011
Tel: +81 6-6301-7520
Fax: +81 6-6301-7521

South Korea

Korea Technic Co. Ltd.
4th Floor, Seo-Chung Building #1163-5
1163-5 Gaepo-Dong, Kangnam-Gu
Gangnam-gu, Seoul 06338
Tel: +82 2 576 3830
Fax: +82 2 578 0602

Malaysia

Technic Asia-Pacific Sdn. Bhd.
1-2-3A, Plaza Ivory
Halaman Bukit Gambir
Penang 11700
Tel: +60 604-656-9300
Fax: +60 604-656-9310

Philippines

Technic Asia Pacific Pte Ltd. Philippines
Prime corner Enterprise St.
Unit 45/46, 4th Floor Prime Center Bldg.
Alabang
Muntinlupa City 1799
Tel: +63 632-807-5450
Fax: +63 632-850-1862

Singapore

Technic Asia-Pacific Pte. Ltd. Singapore
25 Gul Avenue
629665
Tel: +65 6793 8000
Fax: +65 6863 1893

Taiwan

Technic Taiwan Co., Ltd.
No.6-3, Ln. 21, Guangfu N. Rd.
Hukou Township, Hsinchu County30351
Tel: +886-3 6960 466
Fax: +886-3 6960 792