

Surface performance

www.uyemura.com

At \$45, Silver is Tarnished – in *Every* Way!

Miralloy Delivers the Appearance and Key Characteristics of Silver at Savings of 75% – or More

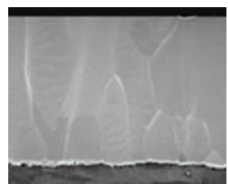
Miralloy was engineered to meet finishers' demands for a "silver" finish that is also low-cost, with performance properties equal or better than silver. Miralloy is that finish. This electroplating alloy of copper, tin and zinc has a bright white finish that is tarnish-free – even under harsh conditions. It has high wear and corrosion resistance, is non-magnetic, and has low porosity and coefficient of friction. It is also solderable, and lead-free.

Miralloy is as hard as nickel, but unlike nickel, it is inert, and is often used as a replacement for nickel in zippers, clasps and other applications involving skin contact.

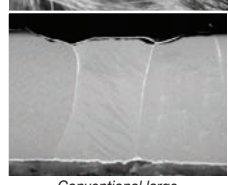


Continued on page 3

Uyemura Announces "22,000-Hour Solution" to Tin Whiskers Formation



GRX-70
fine grained equiaxed



Conventional large
grained columnar



Uyemura International Corp., a world leader in high-performing plating processes, has announced a technology proven to prevent whisker formation in electroplated tin for 22,000 hours – and longer.

This unique high-speed electrolytic process, trade-named GRX-70, is a breakthrough in the control of tin whiskers. Whisker crystals of tin and tin-based alloys are the most common culprits in the short circuiting of electronic components.

Most often, the cause of tin whisker formation is compressive stress.

The proprietary technology developed by Uyemura dissipates compressive stress, preventing whisker formation.

“Precious Metals – Still on the Rise”

By Don Walsh, Director of Operations



Our last few editorials forecasted a continuing rise in precious metals, which has, indeed, occurred. Can they keep rising? And if so, how can buyers manage what seems to be an endless climb?

Surprisingly, the one sector that has cut back substantially on gold use is the industry that uses it the most, jewelry manufacturing. Since 2005, use has plummeted more than 35%, according to an article in the *Wall Street Journal* on 11/18/10. **Savvy manufacturers are using much more silver, as well as platinum.** (Silver is cheaper, but platinum is more expensive than gold, so it is chosen for style reasons, as opposed to cost savings.) Also, many wedding bands are now made with cobalt and tungsten. This industry still uses 52% of world-wide gold purchases, but that is down from 73% in 2005.

As to the current wisdom regarding where gold, silver, and the other precious metals are headed, there is more confusion than clarity. As always, anyone who could make predictions with certainty would be making millions instead of writing about it.

An astute article in the *New York Times* pointed out that all the reporting on record-high gold prices is far from accurate if adjusted for inflation. The former record, set in 1980, would equate to \$2387 per ounce today – so the metal will have to move 59% higher than it is today (\$1504) if it is to set a true “record.”

In late 2010, Ryan Chittum from the *Columbia Journalism Review* suggested that the epidemic of gold records is largely perpetrated by journalists who are less than fully informed about economics – or history. An easy, “hot” story is, for many of them, far sexier than the truth. He urged the news media to stop misleading its readers.

With gold at \$1500 and silver pushing through \$45, no one knows where the top will be. As always, buy smart . . . and use wisely.



“UYEMURA

BATHS

CAN

REDUCE

GOLD

CONTENT

BY HALF”

For our general metal finishing customers, an effective strategy has been a switch from silver to Miralloy. The latter does not tarnish and costs 80% less than silver plating. Not bad.

Equally substantial savings can be realized by our ENIG customers in the electronics industries.

At \$1500+ per ounce for gold, 80% of the cost of running ENIG is due to the amount of gold on the boards. And Uyemura baths can reduce that gold by half. We have developed several baths with a proven track record in this regard, and they have been operational now for several years. As a result, several Uyemura customers are enjoying a greater than 50% savings on their ENIG running costs.

John Nowakowski is New Technical Salesperson for the Southeast and Mid-Atlantic States



His strong background in both the general metal finishing and circuit board industries, combined with UIC’s fast-growing product acceptance, will provide many additional customers the benefit of state-of-the-art, yield-improving processes.

Tech Center Intros New RoHS EN

ANP1012 Plates Nickel Phos Alloys at 10-12 Weight Percent Phosphorus

Uyemura's Connecticut Tech Center has developed an important new lead-free RoHS-compatible electroless nickel process. Called ANP1012, it is proving ideal for applications that require:

- a high degree of resistance to acid or brine
- a non-magnetic nickel finish
- excellent wear resistance combined with a low contact friction finish

ANP1012 consists of four components: Nickel, Makeup, Replenisher and Brightener. The process bath is made-up with the N, M and B; bath chemistry is maintained using the N, R and B components.

ANP is designed for hi-phos EN users throughout industry. For example, in the defense sector, ANP is a predictable and cost-effective alternative for detonators, fuses, wave guides, and lasers.

In the auto sector, "1012" is ideal for heat sinks, pistons, engine bearings, hose couplings and gears.

In aircraft manufacturing, it's an "overhaul" product suitable for landing gears and struts. Pumps, housings and tubular goods are key applications within the chemical processing industries. And in the electronics sector,



Landing gear is an ideal application for ANP1012.

ANP1012 is an excellent non-magnetic nickel plate for connectors, lead wires, memory discs, hermetic seals and HF switches.

Heavy metal-free ANP1012 is also highly suited for extrusion and blow molding dies, and printing rolls. Cycle time is the same as conventional ENs. Deposits are primarily between 2 and 10 microns, but in practice, the effective range is 1 micron to infinite. Close tolerances are maintained easily.

ANP1012 has shown excellent capacity to plate aluminum alloys with excellent adhesion, using conventional zincate pretreatment practice.

Interested? Ask your Uyemura representative about test processing.

Miralloy Story Continued from Page 1

Miralloy is a high-quality, long-lasting finish that's an elegant and practical replacement for palladium, too. It is also an exceptional choice for electrical contact applications, and can be used at high frequencies.

Miralloy is also versatile. It is excellent as a top-coat, or as an undercoat for gold, silver, palladium or palladium/nickel. The Miralloy process deposits quickly, and is compatible with rack and barrel plating. In addition to jewelry and other decorative applications, it is ideal for HF parts, fluid power components, bearings, coils and a wide range of industrial parts, including those with deep recesses.

If you want the look and performance of silver or palladium, without the mind-numbing cost, Miralloy is a proven alternative that can immediately save you 75% or more.

Miralloy is a trademarked product of Umicore-GT and is available exclusively throughout North America from Uyemura. Call your Uyemura representative for details, and test processing.

MIRALLOY

Uyemura President Tony Revier Elected to Top NASF Post

High-Profile Outreach, and Enhancing Membership Value are Key Priorities



The combining of AESF, NAMEF, and MFSA into a single powerful voice continues to bear fruit. Finances are strengthening, membership is being restored to pre-recession levels, and Sur/Fin is nearly sold-out – despite an ambitious, higher target for the number of exhibitors. With those critical metrics all in positive territory, NASF President Tony Revier is leading efforts to share the finishing industry narrative with broader audiences, specifically, legislators, and students.

“Legislative outreach has always been a priority, of course,” says Revier, “but pressures today are intense, and the more effective work we do with education, the less we’ll need to defend ourselves from the untruths, and partial truths, that are always out there. If we can help legislators understand our work, and our importance to industry and society, we can make a positive,

lasting difference in the business climate, and in the regulatory one.”

Students are also critical to the industry’s future. “The NASF Bright Design Challenge, in partnership with the College for Creative Studies in Detroit, challenges students to use innovative surface finishing techniques for decorative applications on cars, trucks and motorcycles,” says Revier. “On the west coast, we’re working with the Art Center College of Design in Pasadena, whose students have moved even further, to prototyping finished products to showcase their surface finishing ideas.

“Whether we’re building value for our members, or working with students to boost awareness of finishing technology, the goal is really the same,” he adds: “to communicate how important – how integral – finishing is to virtually every product we buy – and to let people know what we’re doing to keep the industry strong, and innovating.”

“Only the educated are free.” – Epictetus (55 AD - 135 AD)

CL-NC Copper Plates Directly on Aluminum, Trims Costs, Zincating and Waste Treatment



CL-NC is an alkaline, semi-bright copper process that’s compatible with aluminum and most base metals. Most aluminum parts can be copper plated directly without a zincate etch, which means the entire work sequence can be cyanide-free. Its small grain size means deposits are more dense; they are also more corrosion-resistant, and more resistant to thermal shock than conventional plating.

CL-NC has a neutral (7-8.5) pH, and plates at 140-158°F. It is compatible with both rack and barrel applications. CL-NC offers exceptional adhesion, and is ideal as a base for bright nickel/microcrack/chrome finishing, and, when used with a nickel barrier, as a base for plating gold.

Can CL-NC trim costs from your operation?

- Environmentally, the product is ammonia-free and does not contain chelates, so waste treatment is easier and less costly.
- It does away with the need for cyanide destruct equipment.
- Non-cyanide formula can minimize both fire and liability insurance costs.
- CL-NC Copper is also exceptionally versatile:
 - Making up the copper and conductivity salts at the low end of the recommended range boosts throwing power and deposit uniformity.
 - Making up the copper at the high end of the range enhances overall productivity.
 - Low pH values produce very tight deposits.
 - Higher pH values produce a darker deposit.

CL-NC Alkaline Copper is available exclusively throughout North America from Uyemura. Contact your Uyemura representative for details, and test processing.

UYEMURA INTERNATIONAL CORPORATION

Corp HQ: 3990 Concourse, #425 • Ontario, CA 91764 • ph: 909.466.5635

Tech Center: 240 Town Line Road • Southington, CT 06489 • ph: 860.793.4011

www.uyemura.com

