

Surface performance

CL-NC Alkaline Copper: the First-Ever Solution for Direct Plating on Aluminum

If you need to eliminate cyanide in the wastewater and your cyanide destruct system. . . or, if you're looking for a new plating system on aluminum that doesn't require the make-up and maintenance of zincate . . . [read on](#)

CL-NC Alkaline Copper is a cyanide-free, semi-bright copper electroplating process that's compatible with both rack and barrel applications.

This unique process is also compatible with most base metals. Copper can be plated directly on aluminum and on most aluminum alloys that contain <1% silicon, without the need for any zincate processing. Aluminum 6061, 5052, 2024 and 1008 are examples of popular alloys that are successfully plated. CL-NC replaces the cyanide copper strike used prior to zinc die cast plating.



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2 Decorative Chemistries Gain Widespread Favor



New decorative plating options from CL Technologies-Germany are gaining fans and favor for their excellent bath stability and excellent long-term corrosion resistance.

Tin/Nickel SN1 and SN1 black are each designed primarily for application over bright or satin nickel undercoating. SN1 is a bright, decorative tin/nickel plating that produces a deep, warm, slightly reddish layer; SN 1 Black imparts a deep black-anthracite finish. Both are ideal for a broad range of consumer product applications.

The SN baths have excellent throwing power and are conducive to both rack and barrel plating. The finishes are exceptionally consistent in appearance, resistant to abrasion, and do not require top coating. Both SN1 and SN1 Black offer corrosion protection that's superior to traditional tin-cobalt alloy plated coatings.

“Precious Metals Price to Rise 21% this Year?”

By Don Walsh, *Director of Operations*



A January, 2010 article published in *Purchasing Magazine* predicted that precious metal prices would increase by 21% in 2010, led by a 40% increase in the cost of palladium to \$370/troy ounce from \$264 in 2009.

Platinum was projected to increase to an average \$1442/oz, a 20% gain from \$1200 in 2009. The platinum group metals, which include rhodium, were projected to rise in price due primarily to increased demand from manufacturers of catalytic converters. Rhodium was forecast to rise 19% to a transaction price average of \$1723/oz vs. \$1445 in 2009.

Those predictions are beginning to appear tame. As of late March, palladium had already hit \$477, platinum, \$1623 and rhodium, \$2575.

Analysts at J.P. Morgan Securities had predicted relative calm in supply-demand fundamentals for gold this year, but warned that prices for both gold and silver would remain volatile, rising in sync with concerns about global inflation and dollar depreciation, as well as Iranian nuclear ambitions.

Also driving precious metal prices is the growing popularity of ETFs (Exchange Traded Funds) which many investors regard as a way to invest in hard assets at low cost. Recently, global ETF assets broke through the \$1 trillion milestone. According to Barclays Stockbrokers, there was a 31% increase in ETF investments in Q4, 2009, compared to Q4, 2008. This activity, too, pushes prices higher.

The consensus price of gold in 2010 was, as of late March, \$1221/oz, an increase of 26% from \$972 in 2009. Silver was predicted to rise 15% (to \$16.90/oz from \$14.70) but has already bested that – and is hovering around \$17.30.

While these predictions are not universal, concern about volatility surely is. We can all adjust to a new price level, but wide swings, particularly upward, strike fear in everyone, and confound long-range planning.

More often than we'd like to acknowledge, those who are plating gold, who are experiencing difficulties, are having problems because there is virtually no gold **IN** the gold bath!

We are not sure whether a hope for alchemy or something else is at work here, but gold concentrations must be monitored and managed for the bath to process effectively. Fortunately, there are excellent tools to do this – and Uyemura has the industry's most experienced technical support team to help.

Whether your choice is immersion gold, immersion silver or tin, or if you're receptive to alternatives to the system you are using, Uyemura offers expert field and lab testing, and plating solutions to every application.

“The science of alchemy I like very well, and indeed, 'tis the philosophy of the ancients.”

- Martin Luther's *Table Talk*



The Uyemura Online Library offers a wealth of information on performance and decorative finishing.

Visit:

www.uyemura.com

and click the “library” icon above the ISO logo.



CL-NC Story Continued from Page 1

CL-NC has a neutral (7-8.5) pH, and plates at 140-158°F. It is ideal as a base for bright nickel and chrome finishes, and, when used with a nickel barrier, as a base for plating gold. Applications such as the wheel shown on cover, plumbing products, appliances, bicycle hubs and clothing fasteners all benefit highly from CL-NC processing.

CL-NC is a time and cost-saving process that eliminates 2 zincate steps and 2 rinses, along with the cost of making up and maintaining the zincate and managing waste

treatment for the used zincate. CL-NC Copper was developed by CL Technologies-Germany.

Is your alloy plate-able?

Send us a sample, and let's see what's possible.

Uyemura is a world leader in the development and application of both traditional zincate+cyanide copper plating, and new alternatives, such as CL-NC Copper.

In early 2010, AC Plating, a leading high-production decorative plater in Bakersfield, CA, became the first commercial user of CL-NC Copper. AC works with a variety of substrates, including steel, aluminum, zinc, and brass. The primary goal in looking at CL-NC Copper, according to Owner-President Bob McBride, was to eliminate cyanide in the shop. "Cyanide and chrome are the big environmental issues," says McBride. "I felt like we had targets on our backs!"

AC Plating had 1000 gallons of copper cyanide strike they wanted to eliminate. "We tested zinc die castings first," says McBride. "And so far, the process is doing great. We are out of the cyanide loop, and that means our top-tier CUPA (environmental health agency) status, which cost us \$4000 per year, plus the cost of a full RMP (Risk Management Plan) – another \$4000, plus daily inspections, etc. is history. The new plan is \$800 yr. and we don't need a



Gaming machines are one of AC Plating's key markets.

risk management plan.

We are getting better throw, and adhesion is excellent. The strike is working perfectly; we go straight over to acid copper with no extra

step in-between. And the cost of the chemistry is not significantly different.

"Tech support from Uyemura has been superb," he continues. "They started-up the tank, charged it, and ran parts, working with us the entire time. Any challenges were solved within the first few hours – we ran actual production parts on day one.

"There's a lot of pressure from all sides to 'go green' says McBride. Some of what you need to do is difficult. This very definitely was not."



MIRALLOY®:

Umicore Galvanotechnik's copper-tin (zinc) electrolytes are used for coating nickel-free RF-connectors for leading manufacturers, (see photo, left) and nickel-free plastic parts for leading mobile phone and perfume flask manufacturers. MIRALLOY is available throughout North America exclusively from Uyemura. Test processing is available for qualified manufacturers.



Uyemura Expands Technical Support Team



UIC Director of Operations Don Walsh has announced two new Tech Center appointments. **Marc DePallo**, formerly with Pharmacal Research Laboratories, a manufacturer of commercial cleaners for biomedical research, has been brought on-board as a chemical blender.



Shunsaku Hoshi, formerly with Uyemura's Central Research labs in Hirakata, Japan, will shortly become part of the US Tech Center's R&D team. Mr. Hoshi's specialty is copper chemistry. His appointment comes as interest is growing in Uyemura's new CL-NC Alkaline Copper, the first-ever solution for direct plating on aluminum.

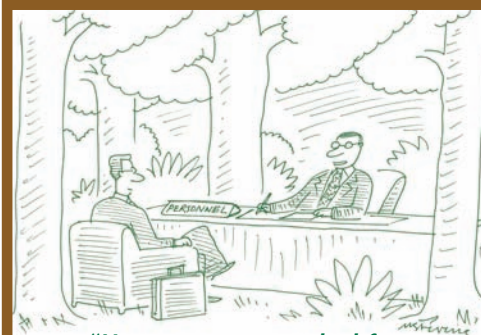
In wind power plants, slip rings coated with Umicore Galvanotechnik's **Auruna® 500**, available throughout North America from Uyemura ensure the reliable transmission of electrical signals.

ARJUNA 500



About Uyemura

At Uyemura, our lifework is the development, and continuous improvement, of chemistries and equipment that enhance the performance, productivity and profitability of the companies we serve. We do it with great enthusiasm, by providing products that are safe, environmentally favorable and cost-effective – and supported by the finest technical service personnel in our industry. Uyemura is . . . the world leader in plating performance!



"Have you ever worked for a green company before?"

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And for this we are **very** grateful!

