Line Card: General Metal Finishing

UYEMURA USA

Auruna, MMO Anodes, Niphos, Dialloy, Electrolytic Palladium 457, Miralloy, Rhoduna Alloy, Trialloy and Antitarnish 616 PLUS are trademarked products of Umicore-GT; KHW-NC and CL Satin Ni are trademarked products of KHW Technology; all other products listed are from Uyemura.

Advanced Plating Alternatives

Miralloy is industry's best and most cost-effective alternative to silver, palladium and nickel for a broad range of applications. In 2013, Uyemura introduced Miralloy 2851, a revolutionary process that operates at 10 ASF – 25-43% faster than competitive products. This process speed gives users instant and substantial advantages in cycle time and cost.

Miralloy is an advanced alloy that deposits up to 15 µm with exceptional uniformity. Its average composition is 51% copper, 33% tin and 17% zinc. Deposits are mirror-like and exceptionally resistant to abrasion and corrosion. It has excellent solderability, and high hardness value. This versatile finish is also tarnish-free, RoHS compliance, non-magnetic, non-allergenic and RF-friendly. Slightly leveling deposits can be achieved at all current densities.

Miralloy has earned widespread acceptance for use on HF connectors, contact elements and solder pins. Because it is nickel-free, this high-performing silver substitute is also an exceptional finish for jewelry and other decorative applications. Miralloy 2851 is plated using standard rack equipment.

Antitarnish 616 PLUS permanently preserves the brightness of silver. Chrome-free, skin friendly, hypoallergenic, and dirt repellent, it is ideal for decorative applications. It also has good sliding properties and solderability and low contact resistance, so it is ideal for a wide range of technical applications as well. Antitarnish 616 PLUS can be used in rack, barrel, or reel-to-reel equipment.

KHW-NC (the "NC" indicates "no cyanide") is a neutral pH, semi-bright alkaline copper that plates directly onto aluminum, and aluminum alloys with less than 1% silicon. It eliminates the necessity of double zincating prior to plating

It is also a replacement for the cyanide copper strike used prior to zinc die cast plating. Bond strength on all these substrates is sufficient to pass the standard Heat-Quench Test, ASTM B571. Its small grain size means deposits are dense, highly corrosion-resistant, and resistant to thermal shock.

Dialloy is a tin/zinc alloy process that produces 80/20 or 70/30 alloys. It provides good distribution, weldability and solderability and excellent corrosion protection for iron.

Niphos is an electrolytic nickel-phos system that replaces gold plating for many electronic connectors, as the process offers corrosion resistance. Processes are available in reel-reel and rack/barrel/vibratory formulations.

Electroless Nickel

NBB Electroless Nickel is bright and robust despite being free of lead and cadmium. It is a mid-phos electroless nickel process in the range of 6 to 8% phosphorus.

KTY Electroless Nickel is the world's first "heavy metal–free" electroless nickel. Lead, cadmium and other heavy metals traditionally used for adding brightness and stability have been eliminated.

ANP Electroless Nickel Plating for Aluminum provides excellent adhesion through at least six MTOs. The process does not employ a strike, adds no steps compared to normal aluminum preparation double zincating.

ANP1012 electroless nickel plates nickel phosphorus alloys in the range of 10-12 weight percent phosphorus.

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High Performance Decorative Finishes

CL Satin Nickel produces fine crystalline nickel deposits, even on polished base materials. Different color effects can be achieved with chrome, antique nickel, black nickel, black chrome and gold.

Auruna Gold Processes are available for various requirements related to color, hardness, or purity.

AuBel Electroless Gold is the most stable electroless gold chemistry known.

Nickstar deposits a thin and highly uniform over-coat of black nickel-zinc alloy, preserving the substrate's brightness while producing an exceptionally rich black nickel finish.

Rhoduna Alloy is a galvanic rhodium alloy, formulated from rhodium and ruthenium. It provides whiteness and performance characteristics equal to the highest-quality rhodium coatings, with greater smoothness and durability. Ideal for large production runs.

Black Ruthenium produces a deep, dark plated surface that closely resembles fine onyx.

Electrolytic Palladium 457 produces high-gloss, low-porosity coatings that are bendable and crack-free, up to 3 µm. Excellent corrosion resistance; stable electrolyte has a wide operating range of current density.

Tin Whiskers Prevention

GRX-70 "Whiskerless Tin" is an acidic electroplating tin bath proven to prevent whiskers formation in electroplated tin for at least 22,000 hours.

GRX-70 alters the crystal structure of the tin deposit from large columnar typical of electrolytic tin into a smaller grain equiaxed structure that's similar to the structure of "non whisker producing" tin/lead. The new crystal structure dissipates compressive stresses produced by intermetallic formation, eliminating the primary source of whisker formation.

GRX-70 produces a uniform white matte deposit with low carbon deposit, and excellent solderability. Its fluoride-free bath is also foam-resistant, with an operating temperature of 113-152˚F. It has a high deposition speed, and high deposition efficiency over a wide range of current densities.

GRX-70 was introduced for rackless and reel-to-reel processing in 2011. In 2012, Uyemura introduced GRX-70 formulated for barrel processing.

Bath Performance Products

Non Mist-L is an EPA-compliant anti-mist additive for chromium platers. It forms a strong foam blanket that reduces the bath's surface tension, preventing the migration of dangerous mists.

Mixed Metal Oxide and Platinized Titanium Anodes provide better distribution on plated parts than Cu or Ag balls or anodes.

MMO anodes have an electrocatalyst of precious / nonprecious metal oxide in "sandwiched" layers.

Platinized Titanium Anodes are manufactured using the world's most advanced anode manufacturing process.

The single-layer platinum electrocatalyst is plated in a molten bath for a service life for physicochemical, rather than mechanical, adhesion, and a service life substantially longer than clad anodes (which are prone to cracking) or traditional plated anodes (which are often plagued by microporosity).

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