* **Gold plating: Hard Gold & Soft Gold:**

**Our Gold Plating coatings conform to:** MIL-DTL-45204, ASTM B488, Type I&II, Code A, up to 99.7% pure

**Purity Type:**

Type I – 99.7 % Gold Minimum, Hardness Grade A or C

Type II – 99.0 % Gold Minimum, Hardness Grade C

Type III – 99.9 % Gold Minimum, Hardness Grade A only

**Hardness Grades:**

Grade A – Knoop hardness 90 max.

Grade C – Knoop hardness 130-200 inclusive

**Thickness Class:**

Class 00 – .00002”

Class 0 – .00003”

Class 1 – .00005”

Class 2 – .0001”

Class 3 – .0002”

Class 4 – .0003”

Class 5 – .0005”

Class 6 – .0015

* **Electrolytic Nickel Sulfamate Plating:**

The Nickel S process is designed to produce a low stress, semi-bright, ductile nickel deposit for electronics applications in rack/barrel and SBE plating equipment. The bath can be used with soluble or insoluble anodes. This process meets the requirements of Fed. Spec. QQ-N-290A, Class 1 and 2 (AMS 2403).

FEATURES AND BENEFITS

1. Soft to hard deposits with good ductility.

2. Ductile deposits with controllable or tensile stress.

3. Ability to alter physical properties of the deposit for various uses.

4. Good corrosion resistance.

5. Good tolerance to impurities.

6. Ease of solution purification. Continuous filtration through activated carbon and continuous electrolytic purification are possible.

7. Stability over long periods of operation. 8. Controllable electrical resistivity of deposit

* **Electroless Nickel Bright:**

FEATURES:

\* No Lead or Cadmium

\* SELF pH Regulating Replenishment

\* Exceptional Stability

\* Consistent Plating Rates

\* 1:1 Replenishment Add Back

\* Consistent Pit-Free Smooth Bright Deposits

\* High Tolerance to Impurities

\* RoHS, WEEE and ELV Compliant

Our Electroless Nickel meets AMS-C-26074, AMS 2404, AMS 2405, and ASTM B733. specifications. META-PLATE PLATINUM PLUS is compliant with ELV automotive), ROHS requirement (electronics), WEEE (electronics) and the Green Initiative (all industries).

* **HASL (Hot air Leveling):**

Hot Air Solder Leveling (HASL) is one of the most common types of PCB surface finishes used in the industry today. HASL finishes are composed of solder, with proportions of approximately 63% tin and 37% lead, This finish is applied by first dipping the circuit board into a molten pot of the tin/lead alloy after the Solder Mask has been applied. Next, a Hot Air Leveler (HAL) removes the excess solder, using hot air knives to leave behind only the thinnest possible layer. This remaining layer of solder protects the traces underneath from corrosion, while easing the task of soldering components to the board during the PCB Assembly Process by pre-tinning the pads on the board. HASL is a very cost-effective surface finish compared to other types of finishes, and thus is considered a great choice for general purpose boards.

* Immersion White Tin Plating:

Immersion White Tin specially engineered “Immersion White Tin” process that can be used as a direct replacement for the hot air solder leveling process. It will cover active copper surfaces with a very dense white tin that retains its solderability in excess of one year. The key to the process is the type and structure of the deposit. It is a fine crystalline structure that is non-porous.

* **Organic solderability protectant (OSP):**

ORGANIC SOLDERABILITY PROTECTANT is an acetic acid based solution containing a substituted imidazole that is designed to produce a thin organic coating on copper while leaving gold plated connectors essentially coating-free. The coating preserves the solderability of the copper surface, it does easily soldered without the need for a separate step to remove the coating. It’s organic solderability protectant (OSP) process provides a thin, uniform, non-tacky film capable of maintaining the solderability of the copper surface through multiple soldering thermal cycles. The coating is formed through a chemical reaction with the copper surface and, when properly applied, will not affect non-metallic surfaces or contribute to ionic contamination. The process leaves gold plated connectors with little or no coating to eliminate the tarnished appearance associated with other OSPs and to allow trouble-free electrical test and functional connections

* **Silver plating:**

Our Silver is bright to mirror-bright ductile deposits with excellent wear resistance. the deposits meet the requirements of QQ-S-365B, Type I and II, as well as AMS 2410, 2411 and

2412. This process is recommended for both electronic and decorative applications.

FEATURES AND BENEFITS

1. Metallic brightener system.

2. Improved tarnish resistance over pure silver.

3. Excellent solderability.

4. Consistent high purity deposits.

5. Low porosity.

6. Recommended for electronic and decorative applications

* **Passivation:**

Our bath is a blend of chemicals formulated for the cleaning and

passivation of stainless-steel products. It is specifically designed to provide low cost and

efficient removal of contaminants and all free iron from the surface of most grades of stainless steel,

including austenitic, ferritic, martensitic, and precipitation hardening, providing the highest chrome oxide levels possible.

* **Copper Plating:**

Oue copper electroplating process provides a semi-bright deposit and is recommended for use as a strike on difficult-to-plate metals. The process provides improved deposit adhesion to the substrate as well as surface activation prior to subsequent electroplating.

FEATURES AND BENEFITS:

1. Easy-to-use single additive strike bath.

2. Semi-bright deposit.

3. Improved adhesion on hard to plate substrates.

4. Provides activation of base metal

* **Chemical Film Specifications (Non-RoHS) & (RoHS) Plating:**

The IRIDITE NCP, Non-Chrome Passivate has been developed in response to the ELV, RoHS and WEEE directives. The IRIDITE NCP does not contain Lead, Cadmium, Chromium (hexavalent or trivalent), Mercury or PBB / PBDE compounds.

IRIDITE NCP is an environmentally friendly chemical process that produces a protective conversion coating on aluminum and its alloys. The coating can be used as a final finish or can also serve as a base for paints, high performance topcoats, powder coat, lacquers, or as a base for rubber bonding.

FEATURES:

• Elimination of the use of hazardous hexavalent and trivalent chromium.

• Provides corrosion protection that rivals conventional chromate conversion coatings when tested in accordance with ASTM B 117.

• The conversion coating passes the requirement of Mil-DTL-5541 Type II Class 3 and Mil-DTL-81706.

• Wide operating range for time, temperature and concentration.

• Provides excellent primer or paint base, or for other subsequent organic treatments when tested in accordance with ASTM D 3359.

• No aging or curing required before topcoat application.

• Baking of treated parts does not affect the coating as with traditional yellow chromates. • Rinsing the IRIDITE NCP coated aluminum in hot water does not compromise the corrosion resistance of the coating. • Reduced waste treatment costs when compared to chromates.

* **Alodine, IRIDITE, chem-film refers to a chemical conversion coating & Clear, protective, tarnish-resistant chromate film on silver:**

Iridite 14 is a chemical process, which produces a clear to yellow corrosion-resistant film on aluminum and its alloys. The film can be used as a final finish or it can be dyed various colors using Iridite Dyes. The Iridite 14 coating is an ideal base for paints and lacquers and can also be used as a base for rubber bonding. Iridite 14 powder is dissolved in water to make the working solution, which can be applied by dip, brush, swab or spray. Iridite 14 can also be used to produce a clear, protective, tarnish-resistant chromate film on silver. It is very economical to use and has a number of advantages over treatments normally used to provide corrosion protection and tarnish resistance to silver. The Iridite 14 film is practically colorless, causes no dimensional change, and can be easily soldered. Its electrical contact resistance is quite low. Iridite 14 in contrast with other protective chemical treatments for aluminum has a minimum effect on the electrical characteristics for either high- or low frequency work. (Iridite 14 is qualified under MIL-DTL-81706, Class 3, Form II, Method C and Class 1A, Form II, Method A, B, C. This specification qualifies products for use in conforming to MIL-DTL-5541

* **Electroless Zinc on Aluminum Plating:**

Our zincate process, specially formulated to produce a high-quality immersion zinc deposit on a wide variety of aluminum alloys, including the highly finished aluminum alloys used in memory disc applications. It is also superior for castings, unlike conventional zincates, this unique process consistently produces uniform, thin, dense, fine-grained zinc deposits with a minimum of etching of the aluminum surface.

These deposit characteristics assure maximum adhesion of subsequent metal deposits, including Niklad and Elnic electroless nickels, electrolytic nickel, and cyanide copper strikes

FEATURES & BENEFITS:

• Can be used on a wide variety of aluminum alloys, including those used for memory disc applications and castings.

• Zinc deposit characteristics, including minimum etching of aluminum, assure maximum adhesion and pore-free electroless nickel coatings.