



Industry Uses:

- Aerospace
- Aircraft
- Automotive
- Electronics
- Defense
- Marine

Coating Specifications:

- AMS-C-26074
- AMS-2404
- AMS-2405
- AMS-2454
- MIL-C-26074
- ASTM-B-733

- Nuclear: MIL-DTL-32119

Capacities:

- 10' deep - up to 1 million pieces
- Weight up to 10,000 lbs.
- 5-ton vertical lift

Possible Substrates:

- Ferrous
- Non-Ferrous
- Cuprous
- Aluminum
- Exotic

Phosphorous Content:

- High
- Mid
- Low

Call: (937) 253-5311

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Electroless Nickel (TM 103)

Electroless Nickel (EN) plating is a process that uses a chemical reaction to codeposit its Nickel-Phosphorus coating onto a desired substrate. This solution differs from other metal finishing processes because it does not require an electricity source to coat the part.

As applied, Electroless Nickel coatings are uniform, lubricious, easily solderable and highly corrosion resistant (dependent upon the phosphorous content of the coating). They can be post hardened through baking to produce higher wear resistance than that of an as-plated condition. This combination makes the coating well suited for a wide variety of uses.

The frictional characteristics of EN coatings are excellent. Their phosphorus content provides a natural lubricity, which helps to minimize heat buildup and reduces scoring and galling and which can be very useful for applications such as plastic molding. The coefficient of friction is one-half that of electroplated Watts nickel.

Technical Advantages

- Improves corrosion resistance
- Uniform deposit:
within +/- .0001 - .0002
- Improved ductility
- Superior strength
- Improved hardness



Techmetals Engineered Electroless Nickel (EN) Finishes

TM 103

Electroless Nickel (EN) Plating at its best. This process has a high phosphorus content, 9%+. It is free of heavy metal contaminants and is relatively pore and crack free. It has a uniform deposit (within +/- .0001 - .0002, which actually encapsulates the part and a hardness of 47-52 Rockwell as plated, heat treatable up to 65-70 Rockwell.

There is superior corrosion resistance to that of standard EN. One mil thick coating has shown no rust after 1,000 hours in a salt spray test. This coating can obviously be used where corrosion resistance is of great importance.

TM 117P

A high phosphorus (9%+) Electroless Nickel (EN), hardened to 64 to 70 Rockwell C and post applied with PTFE. This coating provides a very accurate, dry lubricated hard surface. It has excellent resistance to adhesive wear, with great release properties.

TM 117P is used on mold surfaces for both plastic and rubber molding applications, food process equipment, computer components, aerospace applications and more.

TM 111

TM 111 Electroless Nickel (EN) with a Hard Chrome deposit overlay. The base of the EN provides a uniform corrosion resistant barrier coating.

The EN Hard Chrome overlay provides a hard, wear resistant surface. This deposit can be plated on all ferrous and most non-ferrous metals.

TM 129

A low phosphorus (0 - 4.5%), high hardness, Electroless Nickel (EN) that is 55 to 60 Rockwell C as plated. This uniform deposit is used on aluminum and "even" tempered alloys for hardness. Its corrosion resistance is outstanding in alkaline atmospheres. This coating has found great acceptance in the tool and die industry on molds, plungers and other tooling.

E-Krome

A uniform electroless process, 60-65 Rockwell as plated. We think of it as electroless chrome. It has the color, hardness and low coefficient of friction similar to chrome. E-Krome also has the ability to cover uniformly over complex geometries without the use of electricity, thieves, robbers or shields. This coating helps to alleviate environmental concerns around the use of hexvalent chromium.

TM 104

Techmetals' TM 104 is a lead and cadmium-free, Electroless Nickel (EN), mid-phosphorus metal alloy (5 - 9%). It was developed to follow the requirements for the automotive end-of-life vehicle (ELV) initiatives and specifications.

Waste Electrical and Electronic Equipment (WEEE) initiatives and Restriction of Hazardous Substances (RoHS) regulations are also met by using the TM 104 coating. Used mostly in industries such as aerospace, power generation, electronics, automotive and more.

TM 117C

A high phosphorus (9%+) Electroless Nickel (EN), that is codeposited with PTFE. This coating provides a very accurate, dry lubricated hard surface. It has excellent resistance to adhesive wear, with great release properties.

TM 117C is used on mold surfaces for both plastic and rubber molding applications, food process equipment, computer components, aerospace applications and more.

TM 133

Electroless Nickel (EN) with Boron has low internal stress. This coating is uniform and has excellent wear resistance. In addition, it has good solderability, weldability and excellent wear resistance – with a hardness of 63-65 Rockwell C as plated and heat treatable to 1200-1300 KNH 100, approximately (80 Rockwell C).

Our Nickel Boron has a much lower coefficient of friction than chrome. This deposit is often used to replace hard chrome, carbide and even titanium nitride.

UltraKoat

An Electroless Nickel (EN) co-deposit with sub-micron particles of a diamond-like material. This deposit has a very low coefficient of friction and can be used in applications over 500 degrees F, where PTFE starts to decompose.

The diamond-like particles and low coefficient of friction give this coating the ability to perform well in sliding, wear and abrasive applications. Not recommended for fluid wear.