

ELECTROLESS NICKEL

- High Hardness
- Excellent Corrosion Resistance
- 1,000 Hours Salt Spray Test
- 5—75 Microns Thickness
- Good Wear Resistance
- Low Friction
- For Ferrous and Non-Ferrous Metals
- Uniform Coating Thickness
- Up To 67 HRc Hardness
- "Cold" Process



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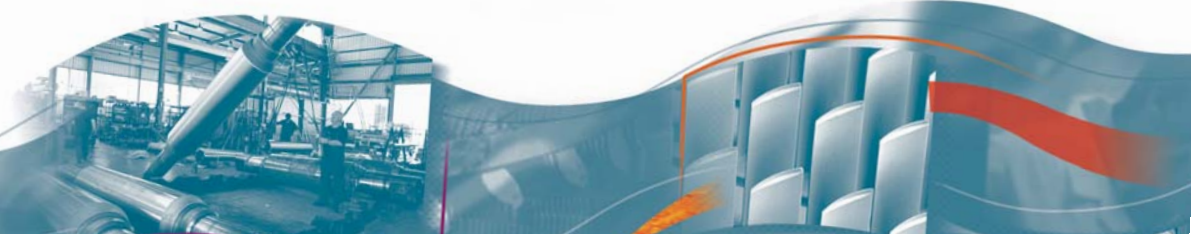
THE PROCESS

Electroless Nickel plating is a non-electrolytic, auto-catalytic, immersion chemical plating method of depositing a Nickel Phosphorous alloy for engineering applications, deposits from 5—75 micron thickness can be applied to most metallic substrate materials, for a wide range of applications.

Electroless Nickel is classed as a "COLD"

process, with temperatures in the order of 85 — 95°C, ensuring no detrimental effects to the physical and mechanical properties of the base materials. Electroless Nickel for engineering applications is covered by ASTM B656-86 and B733-86.

Localised deposits can be produced by masking areas that do not require plating.





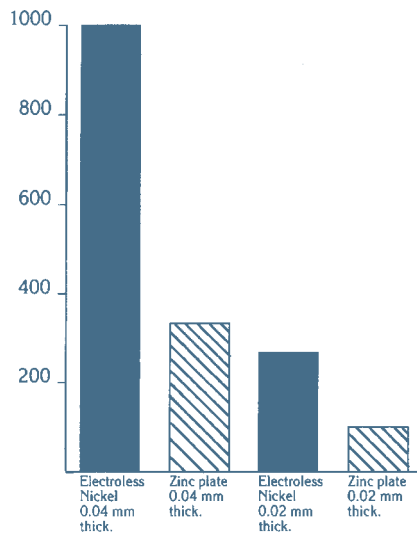
ELECTROLESS NICKEL

THE PROPERTIES

CORROSION RESISTANCE —

Electroless Nickel is a barrier coating with excellent resistance to chemical and corrosive attack by all but the most severely oxidising agents. Tests to ASTM-B117 show Neutral Salt Spray corrosion resistance up to 1000 hours.

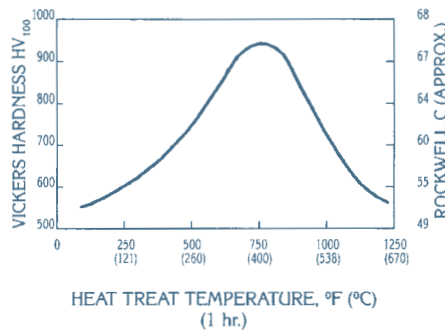
HOURS TO FAILURE



HIGH HARDNESS —

A typical hardness of electroless Nickel, as deposited is in the range 450-480 H.V. (46-48 Rockwell C.) However, the deposits can be precipitation hardened by heat treatment at 400°C for one hour, to 800-950 H.V. (64-68 Rockwell C.) This heat treatment will also improve adhesion and wear resistance.

RELATIONSHIP WITH HEAT TREAT TEMPERATURE FOR NICKEL PHOSPHOROUS COATINGS



LOW COEFFICIENT OF FRICTION —

The Phosphorous content of Electroless Nickel provides natural lubricity and helps minimise heat build-up, reducing galling and scoring. The coefficient against Steel of 0.13 lubricated (0.14 dry) proves the excellent frictional properties, being approx. one half that of steel. This allows extensive use for machinery and Automotive componentry, where friction is a problem.

UNIFORM COATING THICKNESS



Coverage provided by electro-plating process is uneven, particularly at corners.



With the electroless nickel process, plating is evenly distributed over entire surface including external and internal corners.

TYPICAL APPLICATIONS FOR ELECTROLESS NICKEL

HYDRAULIC AND PNEUMATIC COMPONENTS

Rods, Pistons, Cylinders

PUMPING EQUIPMENT

Housings, Rotors, Impellers, Valves, Fittings, Shafts

VALVE COMPONENTS

Balls, Gates & Discs, Plugs, Butterflies and Shafts

MECHANICAL COMPONENTS

OIL AND GAS EQUIPMENT

Packers, Rods, Fire Tubes and Barrels

PLASTIC MOULDS, DIES, SCREWS AND FITTINGS

FOOD EQUIPMENT

Gang Knives, Slicing Blades, Bowls, Mixing Blades, Presses, Timing Screws, Hooks, Conveyor Chain

AUTOMOTIVE COMPONENTS

Diff Pins, Rocker Arms, Steering Unit Comp., Shocker Rods, Brake Pistons, Fuel Injection Comp., Trans. Thrust Washers

CHEMICAL EQUIPMENT

Heat Exchangers, Filter Units, Mixing Equipment, Tubing

SCIENTIFIC EQUIPMENT

MEDICAL COMPONENTS

FOUNDRY PATTERNS, PAPER

AND PULP, TEXTILE EQUIPMENT

AEROSPACE COMPONENTS



Quality Endorsed Company
ISO 9001 Lic. 2102
Standards Australia

