Pioneer METAL FINISHING

TECHNICAL BULLETIN

Nor-Lube™
Electroless Nickel

Pioneer Metal Finishing's Nor-Lube™ is an Electroless Nickel coating with occluded PTFE/Teflon particles.

PTFE (polytetrafluoroethylene) is a synthetic polymer, well known for its low coefficient of friction and non-stick properties.

While the mechanical properties of PTFE/Teflon are only fair, Electroless Nickel, on the other hand, is well known for its excellent mechanical properties, such as hardness, wear resistance, and tensile strength.

This combination yields a coating that is both hard and lubricious, with a high degree of uniformity and excellent release properties.

Because of its unique combination of properties this process is highly suitable for molds, dies and other applications requiring dry lubrication and/or good sliding wear characteristics.

Nor-Lube™ Benefits & Data

Nor-Lube™ combines the strength and hardness of Electroless Nickel and the lubricity and non-stick properties of PTFE.

Process deposits are uniformly laid down, regardless of geometry of part. As a result of deposit uniformity, many **post-plate finishing steps can be eliminated** thus lowering overall finishing costs.

This process has PTFE evenly distributed throughout the thickness of the deposit. Therefore, if **wear** occurs, fresh particles of PTFE are exposed to keep the surface **lubricated throughout the life of the coating.**

Excellent **bond strength** can be obtained between this process and a wide variety of base metals.

Pioneer's Electroless Nickel processes are all ELV, RoHs & WEEE Compliant

COATING ATTRIBUTES

Coefficient of Friction	0.1-0.15
Hardness	250-300 HK100g (as plated) 400-450 HK100g (after heat treatment for 1 hour @ 600°F
Wear Resistance	Baked panel: 15.2 mg/1000 cycles (Taber Wear Index) using CS-17 wheel and 1000 gram load
PTFE Content	4-9% by weight 13-28% by volume
Electrical Resistance	150-250 mW cm
Corrosion Resistance	24 hours Neutral Salt Spray per ASTMB-117
Phosphorus Content	7-10% by weight
Part Dimensions	Maximum part dimension is 14" x 30" x 35"