

# TRICOM<sup>®</sup>-801

## SUPERIOR CORROSION MODERATE WEAR COATING

**USC**  
TECHNOLOGIES  
SURFACE ENGINEERING SOLUTIONS

1-844-679-3591

### General Description

TriCom-801, a Ni-Co-P alloy coating, offers the best corrosion resistance among the TriCom family of coatings. It has a unique combination of hardness and corrosion protection. The hardness of TriCom-801 is somewhat less than hard chrome but has far superior corrosion resistance. Compared to electroless nickel, TriCom-801 is harder, has similar corrosion resistance and is more cost effective at thicker requirements due to its efficiency and buildup capability. The coating is an alternative for most electroless nickel, hard chrome, TDC and nitriding applications. Applications include marine roller and shafts, automotive shock damper rods, and fasteners.

### Process

The TriCom coating is applied using an electroplating process similar to chrome but has a deposition rate 4X faster resulting in 1/5 the energy consumption and reducing CO2 emissions by the same. The part to be coated is held in a rack and immersed in an aqueous bath with electric current applied at the contact points. The process is capable of coating net form shapes including external and internal diameters/surfaces. As with other electroplating processes TriCom tends to lightly build up on sharp edges and fade in deep corners. Embrittlement relief may be required for substrates exceeding 40 HRC.

### Characteristics

- Superior corrosion resistance
- Unlike electroless nickel, thicker deposits are easily possible
- A single-layer, nonbrittle, ductile coating
- NLOS process applicable to internal diameters as small as 0.200
- Unlike thermal spray coatings, does not distort thin metal components and can be applied to near net shapes
- Bonds to ferrous and non-ferrous metals
- Heat treat for greater hardness to 900 HVN

PROPERTIES	TriCom-801	Hard Chrome	Electroless Ni (high P)
THICKNESS (inch)	0.0003" - 0.030"	0.0001" - 0.020"	0.0001" - 0.002"
HARDNESS (HVN)	570-650	900-1000	500-550
CORROSION PROTECTION (ASTM B117)	1,680 hours* *No degradation	72 hours	1,000 hours
CORROSION PROTECTION (ASTM B368)	330 hours Terminated test	<2 hours	330 hours Terminated test
TABER ABRASION WEAR	7.02	1.8	22.5
ELONGATION	<3.5%	0.1%	3.0-6%
TEMPERATURE RANGE	<315°C	<425°C	<315°C
ROTATING BEAM FATIGUE LIFE	No Debit 6x	Debit 0.4-0.6x	Debit 0.3x

### Applications

- Aerospace
- Power Generation
- Structural Steel in Gas Turbine Engines

