

# TRICOM<sup>®</sup>-706

**USC**  
TECHNOLOGIES  
SURFACE ENGINEERING SOLUTIONS

## LOW ABRASION AND WEAR COATING

1-844-679-3591

### General Description

TriCom-706 is a "green" electro-composite coating consisting of a Co-P alloy metal incorporating SiC particulates which are uniformly dispersed throughout its matrix. TriCom-706 provides the best abrasion resistance among the TriCom family of coatings, having the lowest Taber Wear index (TWI). The TWI of TriCom-706 is similar to thermal spray WC, is lower than hard chrome and substantially better than electroless nickel. TriCom-706 applications include suspension systems components for military vehicles and rotary engine components.

### 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.

Tank agitation keeps the 5-8 micron particles in suspension for uniform dispersion. 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

- Exceptional abrasion resistance)
- Applicable to Non-Line-of-Sight geometries
- Build-up/repair suitable to grind
- Heat treat for greater hardness to 900 HVN
- Corrosion resistant better than chrome
- Bonds to ferrous and non-ferrous metals

PROPERTIES	TriCom 706 Class 1	TriCom 706 Class 2	Hard Chrome	Electroless Ni (high P)
THICKNESS (inch)	0.0003" - 0.030"	0.0003" - 0.030"	0.0001" - 0.020"	0.0001" - 0.002"
HARDNESS (HVN)	650-700	850-1200	900-1000	500-550
CORROSION PROTECTION (ASTM B117)	1,000 hours	-	72 hours	1,000 hours
RECIPROCATING WEAR (mm <sup>3</sup> /Nm)	3.2	0.42	0.4 x 10 <sup>-5</sup>	44 x 10 <sup>-5</sup>
TABER ABRASION WEAR	1.0	-	1.8	22.5
ELONGATION	<3.5%	-	0.1%	3.0-6%
TEMPERATURE RANGE	<315°C	<315°C	<425°C	<315°C
G-65 ABRASIVE WEAR WEIGHT LOSS (mg)	11	13	8	-

### Applications

- Aerospace
- Agriculture
- Oil & Gas
- Mining
- Marine
- Military
- On-Highway
- Industrial

