

**TM 105** is a dense, hard, wear resistant and very uniform coating. The coating is used on all ferrous & many non-ferrous metals. In appearance, it is much brighter & smoother than standard hard chrome. Micro-cracked coating is best known for greater hardness, 68-72 Rockwell C, compared to 62-66 Rockwell C for standard hard chrome. In addition, this proprietary deposit has much improved corrosion resistance when compared to standard chrome. The structure of this deposit is very dense with smaller cracks, inclusions & voids. This provides more resistance to fragmentation, galling & wear. These characteristics provide an increase in lubricity & reduction of fatigue limits.

### USER BENEFITS

**Maximum resistance to abrasion & erosion**  
**Corrosion resistance**  
**Non-adhesive**  
**Low coefficient of Friction**

**Can maintain close tolerances & stay very uniform**  
**Increased wear-life of parts**  
**Non-Magnetic**  
**Excellent anti-seizure characteristics**  
**Will coat total or partial surfaces, sharp edges & complex shapes**

### PROPERTIES

Size of Cracks  
 Melting Point (°C)  
 Coefficient of Friction  
 Hardness  
 Knoop or Vickers (100g. load)  
 Rockwell Hardness C Scale  
 Wear Resistance  
 Taber Abraser Wear Test  
 Wt./loss mg./1,000 cycles  
 Falex Wear Test  
 Mg.  
 Linear Coefficient Expansion  
 Microinch/inch/ °C  
 Thermal Conductivity  
 Cal./sq. cm./sec./cm.thickness°C@ 18°C  
 Thickness Controllability (in.) for .001 deposit  
 Smoothness (microinch < 10 substrate)

### TYPICAL VALUE

Micro/Non-Continuous  
 1875-1920  
 0.12-0.17  
 1050-1200  
 68-72  
 9  
 6  
 8.1  
 .16  
 .0003  
 5-15

### CONVENTIONAL CHROME

Micro/Continuous  
 0.12-0.16  
 850-1000  
 62-66  
 12  
 12  
 8.1  
 .16  
 .0005  
 15-30



TM 105 helps in the creation of real money as shown here on a U.S. Treasury plate to print currency.

### TYPICAL APPLICATIONS

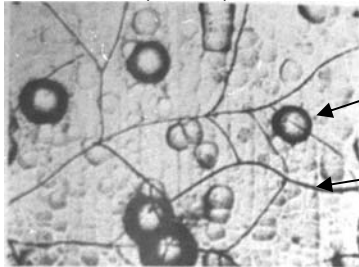
TM 105 is being used widely throughout the industry today. Its primary use is on molds, metal forming, cutting & tooling. Other typical fields are the aircraft, nuclear energy, transportation, canning industry, food vending & computer fields. TM 105 can be varied to meet your specifications or requirements. For a specialized application, contact our service department for assistance



PO Box 1266 Dayton, Ohio 45403 (937)253-5311

## Photographs Show That Not All Chrome Is The Same

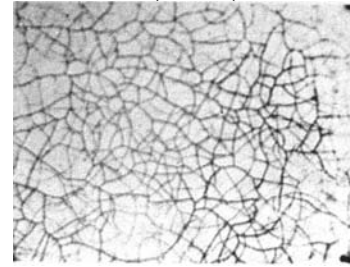
Standard Hard Chrome  
(250X)



Nodules

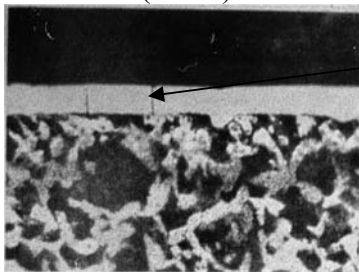
Large Cracks

TM 105  
(250X)



No nodules, smaller cracks

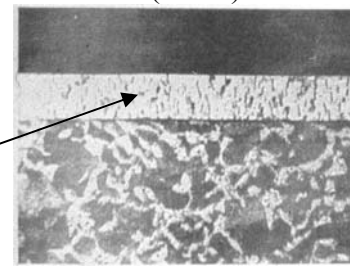
Standard Hard Chrome  
(500X)



Continuous crack to  
steel base

Non-Continuous crack

TM 105  
(500X)



**Wear-Release:** The continuous cracks of standard chrome allow the surface to wear on the edge of the crack. The smaller non-continuous cracks of TM 105 provide no edge for this wear to begin. Nodules, as seen in the 250X magnification of standard chrome, give a rougher surface than the TM 105 and provide sites for corrosion to begin.

**Corrosion:** Note the cracks in the standard chrome are larger and continue to the base metal. This allows the deposit to be undermined by linear corrosion. The cracks in TM 105 are small and non-continuous, protecting the base material. Since the cracks of TM 105 are smaller and closer together, weaker corrosion cells are setup avoiding a reaction similar to the galvanic corrosion.



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