

## Symcoat ENT MIL-C-26074 E Metal Coating

SYMCOAT ENT is a multistep process that can be applied to aluminum, stainless steel, and various steel alloys. First, a nickel alloy coating that contains countless **micropores** is deposited on the metal surface. Then the surface is sealed using a controlled infusion of submicron particles of selected fluorocarbons. The resulting coating is then carefully heat treated to create a smooth, slippery surface.

### SYMCOAT ENT PROVIDES:

- Increased Hardness
- Permanent Lubricity
- Mold Release
- Corrosion Resistance
- Low Coefficient of Friction
- Abrasion Resistance
- Electrical Conductivity

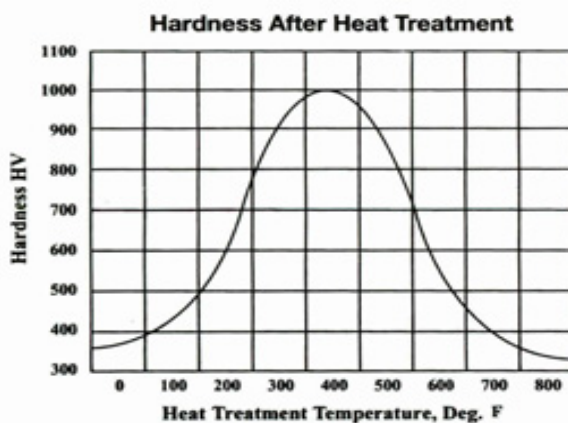
### COATING PROPERTIES

The coating process creates a dry-lubricated, non-stick surface that reduces friction of moving or sliding parts. It's ideal for **cyrogenic** applications down to -250°F. Coating thickness can vary from 0.0002 in. minimum to 0.003 in. maximum. Thickness is **controlled to ? 10% (andy: ~ or +/- ?)**. Hardness of the coatings can range from Rockwell C 50 on aluminum to as high as Rockwell C 70 on steel.

### CLASS FOR

- 1 - Low Coefficient of Friction
  - Lubricity Conductivity
- 2 - Wear and Abrasion
  - Resistance
  - Mold Release
  - Increased Hardness

### ACHIEVABLE HARDNESS CHART



### FRICITION AND SLIDE PROPERTIES

Surface is smooth and slippery. In some cases, the static friction is decreased with increase in load. SYMCOAT eliminates "slip-stick" and undesirable vibration of higher break-away friction. Coefficient of friction: .18 - .12 static and dynamic respectively. (NOTE: *Surface finish or part to which coating is to be applied should have approximately an Ra 16 or better surface texture in order to achieve maximum abrasion and wear resistance coupled with lowest coefficient of friction.*)

## **BENEFITS**

When using **SYMCOAT ENT** on aluminum you can expect the following benefits:

- **Provides Hardness of Steel Without the Weight**
- **Protects Against Abrasive Wear**
- **Provides Electrical Conductivity**
- **Prevents Static (ESD) Build Up**
- **Dry-lubricated, Non-stick Surface Reduces Friction of Moving or Sliding Parts**
- **Ideal for Cryogenic Applications Down to -250°F**
- **Prevents Galvanic Corrosion with Incompatible Metals**

## **COMPARE SYMCOAT VS CHROMIUM**

Symcoat coatings provide uniformity and do not build up on the high current density areas (as shown in diagram above). Thus resulting in **costly** and labor intensive **secondary machining** and **secondary finishing** steps being eliminated. The efficiency of chromium plating is poor under optimum conditions, and can lead to large variations in coating thickness when applied to parts with complicated surfaces. However, **SYMCOAT ENT** is not affected by configuration of parts.