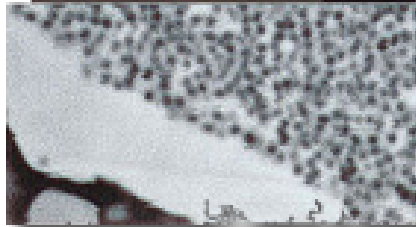


SYMCOAT ENTECOAT

NICKEL COMPOSITE

SYMCOAT ENTECOAT is a unique, improved self-lubricating Nickel Alloy Composite which gives even lower friction and greater load carrying capacity than Conventional Hi-Phos Electroless Nickel. It is a revolutionary coating for design engineers, combining the dimensional accuracy of electroless nickel with the excellent sliding properties of PTFE.

SYMCOAT ENTECOAT can be applied in very thin deposits with high dimensional precision on most metallic substrates including mild steel, stainless steel, cast iron, aluminum and titanium. This allows the designer to choose his substrate and mating parts on the basis of a need for strength, light-weight or corrosion resistance. Any problems of galling or wear which might occur with such materials can be completely overcome with SYMCOAT ENTECOAT.



Components coated with SYMCOAT ENTECOAT

Coating cross-section, x 500

Features

- Extremely low friction
- Superb accuracy of deposition
- Completely uniform coverage
- Thin deposits i.e, 5-10 microns
- Extended component life
- Non-stick
- No post-matching
- Plates on most metals
- Excellent anti-galling
- Can be hardened to 400Hv
- Very low wear
- Electrically conducting
- Pleasing visual appearance

Benefits

Low Friction

The superior friction properties of SYMCOAT ENTECOAT are invaluable in an unlubricated situation. The uniform dispersion of polymer within the coating produces low friction throughout the component life.

SYMCOAT ENTECOAT also imparts non-stick properties, with a reduced drag or torque during initial running. Additional polymer is available on the coating surface to provide a start-up and assembly aid.

Surface Finish

SYMCOAT ENTECOAT is available in thicknesses from 2 microns to 20 microns.

Applications

- Mold Release
- Tools
- Connectors
- Fasteners
- Circuit Breaker Components
- Valve Seats
- Pump Bearings
- Machine Tools

SURFACE	Friction vs Hard Steel
Steel	0.50
Electroless Ni	0.45
Hard Chrome	0.40
MoS ₂	0.20
SYMCOAT ENTECOAT	0.08

Uniformity

SYMCOAT ENTECOAT provides predictable uniform coverage in the range of 5 to 20 microns, depending on the application. It can be applied to your finished product without the need for post machining. It can even coat internal surfaces, thread forms and bores.

Low Wear and Anti-Galling

In lightly loaded situations, SYMCOAT ENTECOAT has been known to show no detectable wear for many thousands of operations, such is the efficiency of its self lubrication. At higher loads, it will exhibit some wear, but it

is excellent for threads or connectors which can always be undone, no matter how tight you fasten them – even with stainless steel threads, galling is a thing of the past.

Substrate Materials

Symcoat has solved all the pretreatment problems, so that SYMCOAT ENTECOAT can be applied with confidence to materials like titanium and aluminium as well as the more usual range of mild steel and stainless steels.

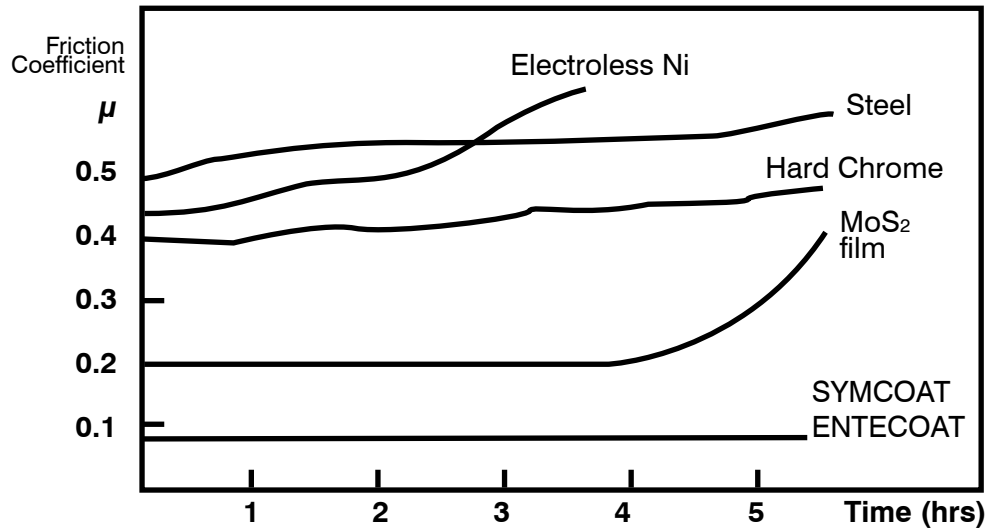
Often, SYMCOAT ENTECOAT can bring desirable tribological properties to a light-weight material - a vital property for aerospace and automotive applications.

The information contained in this leaflet is intended for guidance only. While every effort is made to understand the environment in which a coating is designed to work, success invariably can only be determined by trials and in service testing.

Hardness

SYMCOAT ENTECOAT has a bulk hardness of about 250VHN, although this can be increased after heat treatment of the coating at 300°C for four hours to 400VHN. There is no reason to doubt that the matrix in SYMCOAT ENTECOAT has a hardness of at least 500VHN, increasing to 1000VHN after this type of heat treatment.

Sliding Friction vs Time (against polished hard steel)



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