Dry Film Lubricants/Solid Film Lubricants

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For over thirty years Har-Conn has applied Dry Film Lubricants. We apply the most popular brands and have a wide range of experience in pretreatments and general product knowledge.

Although dry film lubricant coatings have been in use since the late 1950's many companies to this day are not aware of the functional purpose and products available.

Definition: "Materials with inherent lubricating properties which are firmly bonded to the surface of a substrate by some method"

Methods of bonding: Spray Resin Bonding, Burnishing, Mechanical Impingement, Dip Application and Sputtering-Vacuum. There are a few additional methods however the aforementioned tend to be the most popular.

Solid Lubricant Materials: Molybdenum Disulfide, Antimony Trioxide, Tungsten Disulfide, Boron Nitride, Graphite and Polytetrafluoroethylene. These tend to be the most popular however there are other materials used for specific applications.

Typical Binder Systems: Organic Air Dry=Acrylics, Alkyds, Epoxies, Urethanes. Organic Thermosets=Phenolic, Silicones, Polyamides, Phenoxys, Epoxy-Phenolic. Inorganics=Silicates, Phosphates, Aluminates.

In the aerospace and heavy industrial markets the most popular Lubricant Materials are Molybdenum Disulfide and Molybdenum Disulfide/ Antimony Trioxide systems. These products can be used in high temperature high load applications.

The non-Polytetrafluoroethylene coatings are made up of a combination of resin binders and solid lubricant pigments. The binder holds the pigment in place so a layer interposes between the wear surfaces. As the surfaces move the layer shears easily preventing direct contact of the substrate material. As the load increases the coefficient of friction decreases. Polytetrafluoroethylene coatings tend to be used in light load applications where low and consistent friction and/or anti-stick properties are desired. In addition, they offer good chemical resistance and dielectric properties.

The best Solid Film Lubricant formulation will not perform as well as the worst if the pretreatment is not correct. Each substrate requires the correct pretreatment to achieve optimum performance. As an applicator of Solid Film Lubricants Har-Conn follows the prime contractor specifications for pretreatments. If the specification does not offer pretreatments, Har-Conn follows the coating manufactures recommended pretreatment.

Solid film Lubricants are a system, not just a product. If all parameters are not considered and controlled, the odds of having a well performing coating is low.

TYPICAL USES FOR SOLID FILM LUBRICANTS

- Pistons & Cylinders
- Telescoping assemblies
- Jack Screws
- Gears
- Metal forming
- Latches
- Fasteners
- Mold release
- Bearings
- Springs
- Switch components
- Couplings
- Splines
- Pins

About the writer

Mr. Megofna spent 34 years with E/M Corporation Division of Great Lakes Chemical & Division of Morgan Crucible plc (brand products Everlube@-Lub-Lok@-Everslik@-Microseal@) holding a number of positions including Vice President Sales & Marketing and Global President.