#### **Technical Data Sheet:**

# **Dicronite® Dry Lubrication**



# Dry Film Lubricant Coating

# PRODUCT DESCRIPTION

Dicronite® is a tungsten disulfide (WS<sub>2</sub>), solid lubricant coating. This extremely thin film coating provides friction and sliding wear reduction that improves performance in various applications across industries.

# **APPLICATION PROCESS DESCRIPTION**

Dicronite® is applied at one of many licensed coating facilities. After surface preparation, Dicronite® dry lubricant is impinged onto the substrate surface. The coating process is conducted at room temperatures. The material includes no binders or adhesives and requires no curing. Dicronite® can be re-applied without extensive stripping.

#### **COATING INFO**

ACCEPTABLE SUBSTRATES	All metals, most plastics, and some ceramics; may be applied on other coatings/platings
APPEARANCE	Silver, blue gray, dark gray
THICKNESS	0.5 micron (0.00002 inch) or less

PERFORMANCE OVERVIEW		
FRICTION REDUCTION	Application systems with Dicronite® coated on smooth surfaces typically range between 0.03 and 0.07 $\mu_{\it k}$ (coefficient of dynamic friction)	
WEAR REDUCTION	Reduces sliding wear; not appropriate for abrasive wear reduction	
LOAD CAPACITY	Same as substrate, up to approximately 350,000 psi (2,415 MPa)	
THERMAL STABILITY	<ul> <li>Stable across wide temperature range; withstands temperature swings</li> <li>up to approximately 538°C (1000°F) in air</li> <li>up to approximately 1316°C (2400°F) in vacuum</li> <li>down to approximately -188°C (-305°F)</li> </ul>	
VACUUM STABILITY	Very low outgassing; suitable spacecraft material  • TML < 1.0 %, CVCM < 0.1 %	

# **COMMON INDUSTRIES**

#### **COMMON APPLICATIONS**

Aerospace
<b>Automotive</b>
<b>Food Processing</b>
Semiconductor

Medical Plastics Oil and Gas Nuclear Actuators
Ball Screws
Bearings
Bushings
Chains
Couplings
Fasteners

Gears Guides Molds Pins Shafts Sprockets

# **ADDITIONAL COATING INFO**

CHEMICAL STABILITY	Inert
TOXICITY	Non-toxic
HARDNESS	1.0 – 1.5 on Mohs' scale
MAGNETISM	Non-magnetic
HANDLING	Sensitive to scratching and abrasion; prevent damage to coated surfaces

#### **APPLICATION CONSIDERATIONS**

SUBSTRATE DEFORMATION	Will not induce stress on substrate; coating deforms with substrate
CORROSION RESISTANCE	Provides only minimal corrosion inhibition
CONDUCTIVITY	Will not significantly affect surface conductivity (thermal or electrical)
CO-LUBRICATION	Suitable for lubrication with oils and greases
LIQUIDS COMPATIBILITY	Compatible with many fuels, hydraulic fluids, and solvents
OXYGEN COMPATIBILITY	Suitable for liquid and gaseous oxygen systems
RADIATION STABILITY	Stable (tested according to LEO and nuclear containment vessel radiation levels)
BIOCOMPATIBILITY	Biocompatible per USP Class VI and ISO-10993 testing

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