Technical Data Sheet:

Dicronite® Dry Lubrication

DL-5® DICRONITE®
Developed & Distributed by Lubrication Sciences International, Inc.

Dry Film Lubricant Coating

PRODUCT DESCRIPTION

Dicronite® is a tungsten disulfide (WS_2), 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 μ_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	Stable across wide temperature range; withstands temperature swings • up to approximately 538°C (1000°F) in air • up to approximately 1316°C (2400°F) in vacuum • down to approximately -188°C (-305°F)
VACUUM STABILITY	Very low outgassing; suitable spacecraft material • TML < 1.0 %, CVCM < 0.1 %

COMMON INDUSTRIES

Aerospace
Automotive
Food Processing
Semiconductor
Medical
Plastics
Oil and Gas
Nuclear

COMMON APPLICATIONS

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

CONTACT US

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LOCATIONS

N. CALIFORNIA – S. CALIFORNIA – TEXAS
MINNESOTA – GEORGIA – MASSACHUSETTS

MEXICO – NETHERLANDS – GERMANY
ITALY – KOREA – JAPAN