



TECHNOLOGY DESCRIPTION

Dicronite® functions as a solid dry film lubricant coating composed of tungsten disulfide (WS₂). Tungsten disulfide is naturally found as the rare mineral tungstenite but is commonly synthesised through the combination of tungsten and sulfur. The molecular structure of tungsten disulfide forms stacks of thin layers, also referred to as a lamellar structure. These thin layers are connected to each other by weak bonds that are easily broken. This allows layers to slide along one another with very low resistance, or low friction.



INNOVATIVE ASPECTS

- Extremely low friction coefficient of $\mu = 0.030$
- Dicronite® can be applied on most substrates. This includes all metals, most plastics, and some ceramics.
- Dry film permanently fixed to the surface by molecular bonding
- Dicronite® has an average thickness of 0.5 microns (0.00002 inch) or less. The half micron thickness allows tolerances to remain unaffected, ensuring engineers can avoid redesign and easily incorporate the coating on existing designs.
- Virtually no limitation to working temperature; with a range of use of -188°C to +538°C a multitude of applications can be covered.



TECHNOLOGY READINESS (in space application)

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COUNTRY OF ORIGIN

Germany

LATEST UPDATE

06/2024

TAGS

#coating

#friction

#dry lubricant

#bonding

#film

#wear

APPLICATION AREAS

Aviation

Energy

Construction & Civil Engineering

Infrastructure & Smart Cities

Mechanical Engineering

Space technologies

Transport & Logistics

TECH CARD

