JADE CHEMICALS

Solid/Dry Lubricant Tungsten Disulfide (WS_2) Powder

Tungsten Disulfide (WS_2): A Superior Dry Lubricant

Tungsten Disulfide (WS_2) is one of the most advanced and effective dry/solid lubricants available today. Known for its ultra-low friction properties, WS_2 offers a coefficient of friction as low as 0.03 (dynamic) and 0.07 (static)—lower than that of Graphite or Molybdenum Disulfide (MoS_2). This makes it one of the most lubricious substances in the world. WS2 powder can be added to Oil/Lubricant/Liquid/Water/Plastic etc. to increase lubricity of mixture. WS2 can also be coated on a substrate by Spraying/Buffing/Tumbling.

Exceptional Performance Under Extreme Conditions:
WS_2 performs exceptionally well in extreme environments, making it a go-to choice for high-demand applications:
Temperature Resistance:
In normal atmospheric conditions: from -450°F (-270°C) up to 1200°F (650°C)
In vacuum environments: from -305°F (-188°C) up to 2400°F (1316°C)
High Load Tolerance:
WS_2-coated films can handle pressures up to 300,000 psi, making them ideal for high-stress, heavy-load applications.

Physical and Technical Properties

Properties	Tungsten Disulfide (WS_2) CAS No 12138-09-9
Colour	Silver Gray
Appearance	Crystalline Solid
Melting Point	1250° C, 1260° C (decomposes)
Boiling Point	1260° C
Density	7500 $Kg.m^{-3}$
Molecular Weight	248
Coefficient of Friction	0.03 Dynamic; 0.07 Static
Load bearing ability	300,000 psi for coated film
Lubrication Temperature Range	Ambient: from -273° C to 650° C Vacuum(10^{-14} Torr): from -188° C to 1316° C
Chemical Durability	Inert Substance, Non-Toxic
Magnetism	Non-Magnetic

Rockwell Hardness	30 HRc
Coating Specifications	Spray Blast substrate with Cold and Dry Air at 120 PSI
Coating Film Thickness	0.5 micron
Corrosion Stability	Can slow down the corrosion rate, but cannot fully prevent substrate corrosion
Coatable Substrates	Iron, Steel, Aluminum, Copper, other Metals, Plastics and Manmade Solids
Compatibility	Oil, Solvent, Paint, Fuel, Water, Resin/Plastic,

WS_2 powder is available in Nano grade and sub-micron particle sizes such as 0.4 up to 1.0 micron.

Jade Chemicals, #52, Ground Floor, Main Channel Road, 3rd Main, SG Layout, Halasuru, Bengaluru, 560008. **Email:** jade3chemical@gmail.com **Tel: 88610 12686**