



MSDS of Tungsten Disulfide

Chinatungsten Online (Xiamen) Manu.&Sales Corp.

SECTION I – SUBSTANCE/PREPARATION AND COMPANY IDENTIFICATION

Product/Material: Tungsten Disulfide

C.A.S. Number: 12138-09-9

Product Name: Tungsten Disulfide

Synonyms: Tungsten Disulphide, Tungsten Sulfide

Application: Dry lubricant

Chemical Formula: WS₂

SECTION II – COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Nature (Substance): Refractory metal sulfide

CAS-Registry No.: 12138-09-9

EINECS-NO.: 235-243-3

SECTION III – HAZARDS IDENTIFICATION

Hazard Description: Not applicable

SECTION IV – FIRST AID MEASURES

Inhalation: If symptoms of pulmonary involvement develop, remove from exposure and seek medical attention.

Skin Contact: If irritation occurs, thoroughly wash affected area with mild soap and water and prevent further contact. Contact medical help if irritation persists.

Eye Contact: If irritation occurs, flush with copious amounts of water. Contact medical help if irritation persists.

Ingestion: If substantial quantities are swallowed, give person (if conscious) a large quantity of water to drink, induce vomiting, and seek medical attention.

SECTION V – FIRE FIGHTING MEASURES

Flash Point: N/A

Flammability Limits: N/A

In case of fire, sulfur dioxide and tungsten trioxide are formed.

No fire hazard. Use extinguishing agents suitable for surrounding fire.

Special Procedures: Use a self-contained breathing apparatus to prevent inhalation of dust, mist or fumes that may be generated during fire fighting activities.

No unusual fire or explosion hazards.

Suitable Extinguishing Media: Dry sand, special metal extinguishing powder.

Unsuitable Extinguishing Media: Water



SECTION VI – ACCIDENTAL RELEASE MEASURES

If Spilled or Released: Ventilate area of spill, clean up using methods which avoid dust generation, such as vacuuming with appropriate filter, wet dust mop, or wet cleanup.

Precautionary Measures

Regarding Persons: Remove source of ignition. Avoid formation and deposition of dust. Ensure effective ventilation. Use the PPE (Personal Protective Equipment) as per chapter 8.

(European Union: Note German Technical Regulation on Dangerous Substances No.200/201)

SECTION VII – HANDLING AND STORAGE

Handling: Maintain good housekeeping procedures to prevent accumulation of dust. Use clean-up methods which minimize dust generation.

Storage: Keep in sealed containers in a dry place.

(European Union: Observe the rules contained in the VCI concept for separate/common storage. Observe official regulations. Storage class as per VCI: 11)

SECTION VIII – EXPOSURE CONTROL/PERSONAL PROTECTION

Respiratory Protection: Use an appropriate NIOSH approved respirator. If airborne dust levels exceed the TLV, appropriate requirements set forth in 29 CFR 1910.134 should be met.

Wash thoroughly after handling and before eating, smoking and end of work shift. Do not shake clothing to remove dust. Avoid inhalation, ingestion and direct skin contact.

Ventilation: Use local exhaust which is adequate to limit exposure levels below TLV.

Gloves: Recommended

Eye Protection: Recommended

(European Union: Respiratory equipment with filter type P according to DIN EN 143)

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

Appearance & Odor: Grayish-black powder, no odor

pH Value: 2 @ 20°C 100 g/l (aqueous suspension)

Boiling Point: N/A

Melting Point: 1250 °C (decomposition)

Vapor Pressure (mm HG): N/A

Vapor Density (Air=1): N/A

Solubility in Water: Insoluble

Specific Gravity: (H₂O=1) 7.4

Percent Volatile by Volume: 0

Evaporation Rate: N/A

How Best Monitored: Air sample



Non-Hazardous Ingredients Material: Tungsten Disulfide

Percent by Weight: 100

ACGIH TLV: 5MG/M3

(Limit is for insoluble compounds as W)

SECTION X – STABILITY AND REACTIVITY

Reactivity Data

Stability: Stable

Conditions to Avoid: N/A

Incompatible Materials to Avoid: Contact with strong acids may generate Hydrogen Sulfide.

Hazardous Decomposition Products: Oxides of Sulfur and Tungsten may be evolved at extreme temperatures.

SECTION XI – TOXICOLOGICAL INFORMATION

Toxicological Tests

Acute toxicity: LD50 Oral, rat: > 2000 mg/Kg

LC50 Inhalation, rat: > 5.25 mg/l, 4 h of exposure

Irritating/Corrosive Effects

Irritation of eyes/rabbit: Slightly irritant

Irritation of the skin/rabbit: Non-irritant

Mutagenic effect

Salmonella typhimurium: No Indication of mutagenic effects.

SECTION XII – ECOLOGICAL INFORMATION

Aquatic Toxicity

Acute Fish Toxicity:

96 h LC50 (Brachydanio rerio): > 485 µg/l

(Maximum produceable concentration in the case of a weighed portion of 100 mg/l)

Acute Toxicity for Daphnia:

48 h EC50 (Daphnia magna): > 510 µg/l

(Maximum produceable concentration in the case of a weighed portion of 100 mg/l)

Toxicity for Algae

72 h EbC0 (Scenedesmus subspicatus): > 330 µg/l

72 h ErCo (Scenedesmus subspicatus): > 330 µg/l

(Maximum produceable concentration in the case of a weighed portion of 100 mg/l)

Toxicity to Bacteria: 3 h EC50 (activated sludge): 8972 mg/l

SECTION XIII – DISPOSAL CONSIDERATIONS



Disposal: Dispose off in accordance with appropriate Federal, State and Local regulations.

Unused material: Reuse if possible.

SECTION XIV – TRANSPORT INFORMATION

Non Hazardous cargo. Keep separated from foodstuffs.

SECTION XV – REGULATORY INFORMATION

No Special regulations. Not regulated (Observe national regulations)

(European Union: No Labeling is required in accordance with the EEC directives.

TRGS 900 Atmospheric Threshold Value: Insoluble Tungsten Compounds: 5 mg/m³

Handling restrictions: None

Major accident regulations: Not listed in the appendices.

Technical Instruction for Air Pollution Control: Figure 5.2.1 Total dust

Water Pollution class (WGK): Not harmful to water)

SECTION XVI – OTHER INFORMATION

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