

# MATERIAL SAFETY DATA SHEET

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*Material Safety Data Sheet (as per 2001/58/CE)*

*Product name: TUNGSTEN DISULFIDE (WS2)*

*Date of issue: January 2, 2008*

## 1. Dry Lubricant Powder ( MK-WS2-06)

### 1.1. Substance / Preparation and Company Identification:

1.1.1. **Product name:** Tungsten Disulfide, Tungsten Disulphide, Tungsten Sulfide (WS2)

1.1.2. **Application:** Dry Lubricant

1.1.3. **Supplier:**

M K Impex Canada

6382 Lisgar Drive

Mississauga, Ontario L5N 6X1, Canada

Phone: 416-509-4462

Fax: 905-824-1259

Contact Person: Ken Katakia

[www.lowerfriction.com](http://www.lowerfriction.com)

[info@lowerfriction.com](mailto:info@lowerfriction.com)

1.1.4. **Emergency contact:** as above

## 2. Composition / Information on Ingredients:

2.1. **Chemical nature (substance):** REFRACTORY METAL SULFIDE

2.2. **CAS-Reg. No.:** 12138-09-9

2.3. **EINECS-NO.:** 235-243-3

## 3. Possible Hazards:

3.1. **Hazard Description:** Not Applicable

## 4. First Aid Measures:

### 4.1. EMERGENCY AND FIRST AID PROCEDURES:

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

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

4.1.3. **Eye contact:** if irritation occurs, flush with copious amounts of Water, contact medical help if irritation persists.

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

## 5. Fire Fighting Measures:

- 5.1. **Flash Point:** N/A
- 5.2. **Flammability Limits:** N/A
- 5.3. In case of fire, sulphur dioxide and tungsten trioxide are formed.
- 5.4. No Fire Hazard, Use extinguishing agents suitable for surrounding fire.
- 5.5. **Special Procedures:** Use a self-contained breathing apparatus to prevent inhalation of Dust, Mist or fumes that may be generated during fire frightening activities. No Unusual fire or explosion hazards.
- 5.6. **Suitable extinguishing media:** Dry Sand, Special Metal extinguishing powder.
- 5.7. **Unsuitable extinguishing media:** Water

## 6. Accidental Release Measures:

- 6.1. **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 clean up.
- 6.2. **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)

## 7. Handling and Storage:

- 7.1. **Handling:** Maintain good housekeeping procedures to prevent accumulation of dust. Use clean-up methods which minimize dust generation.
- 7.2. **Storage:** Keep in sealed containers in a dry place.
- 7.3. **European Union:** Observe the rules contained in the VCI concept for separate/common storage. Observe official regulations. Storage class as per VCI: 11

## 8. Exposure Controls and Personal Protection:

- 8.1. **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
- 8.2. **Ventilation:** Use local exhaust which is adequate to limit exposure levels below TLV.
- 8.3. **Gloves:** Recommended
- 8.4. **Eye Protection:** Recommended
- 8.5. **European Union:** Respiratory equipment with filter type P according to DIN EN 143

## 9. Physical and Chemical Properties:

- 9.1. **Appearance & Odour:** greyish-black powder, no odour
- 9.2. **PH value:** 2 @ 20o C 100 g/l (aqueous suspension)
- 9.3. **Boiling Point:** N/A
- 9.4. **Melting Point:** 1250o C (decomposition)
- 9.5. **Vapour Pressure (mm HG):** N/A
- 9.6. **Vapour Density (air=1):** N/A
- 9.7. **Solubility in Water:** INSOLUBLE
- 9.8. **Specific Gravity:** (H2O=1) 7.4
- 9.9. **Percent Volatile by Volume:** 0
- 9.10. **Evaporation Rate:** N/A
- 9.11. **How Best Monitored:** AIR SAMPLE
- 9.12. **Non-Hazardous Ingredients**

- 9.13. **Material:** TUNGSTEN DISULFIDE  
9.14. **Per cent by Weight:** 100  
9.15. **ACGIH TLV:** 5MG/M3 (Limit is for insoluble compounds as W)

## 10. Stability and Reactivity:-

### 10.1. Reactivity Data

- 10.1.1. **Stability:** Stable  
10.1.2. **Conditions to avoid:** N/A  
10.1.3. **Incompatible Materials to Avoid:** Contact with strong acids may generate Hydrogen Sulphide  
10.1.4. **Hazardous Decomposition Products:** Oxides of Sulphur and Tungsten may be evolved at extreme temperatures.

## 11. Toxicological Information:-

### 11.1. Toxicological tests:

- 11.1.1. **Acute toxicity:**  
11.1.2. **LD50 Oral, rat:** > 2000 mg/Kg - LC50 inhalation, rat > 5.25 mg/l, 4 h of exposure  
11.1.3. **Irritating/Corrosive effects:**  
11.1.4. **Irritation of eyes/rabbit:** slightly irritant  
11.1.5. **Irritation of the skin/rabbit:** non-irritant  
11.1.6. **Mutagenic effect:** Salmonella typhimurium: No Indication of mutagenic effects.

## 12. Ecological Information:-

### 12.1. Aquatic toxicity:

- 12.1.1. **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)  
12.1.2. **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)  
12.1.3. **Toxicity for algae:**  
12.1.3.1. 72 h EbCo (Scenedesmus subspicatus): > 330 µg/l  
12.1.3.2. 72 h ErCo (Scenedesmus subspicatus): > 330 µg/l  
(Maximum produceable concentration in the case of a weighed portion of 100 mg/l)  
12.1.4. **Toxicity to bacteria:** 3 h EC50 (activated sludge): 8972 mg/l

## 13. Disposal Consideration:-

- 13.1. **Disposal:** Dispose of in accordance with appropriate Federal, State and Local regulations.  
13.2. **Unused material:** reuse if possible.

## 14. Transport Information:-

- 14.1. Non Hazardous cargo. Keep separated from foodstuffs

## 15. Regulatory Information:-

- 15.1. **No Special regulations.:** No regulated (Observe national regulations)

- 15.2. **European Union:** No Labelling is required in accordance with the EEC directives.
- 15.2.1. **TRGS 900 Atmospheric Threshold Value:** Insoluble Tungsten Compounds: 5 mg/m<sup>3</sup>
- 15.2.2. **Handling restrictions:** none
- 15.2.3. **Major accident regulations:** not listed in the appendices
- 15.2.4. **Technical Instruction for Air Pollution Control:** Figure 5.2.1 Total dust
- 15.2.5. **Water Pollution class (WGK):** not harmful to water

## 16. Other Information:-

### 16.1. Important:

- 16.1.1. Although M K Impex Canada has attempted to provide current and accurate information therein,
- 16.1.2. M K Impex Canada makes no representations regarding the accuracy or completeness of information and assumes no liability for any loss, damage, or injury of any kind which may result from, or arise out of, the use of or reliance on the information by any person.

### 16.2. Sold by:

- 16.2.1. M K Impex Canada  
6382 Lisgar Drive  
Mississauga, Ontario L5N 6X1, Canada  
Phone: 416-509-4462  
Fax: 905-824-1259  
Contact Person: Ken Katakia  
[www.lowerfriction.com](http://www.lowerfriction.com)  
[info@lowerfriction.com](mailto:info@lowerfriction.com)

### 16.3. 4 Lube Limited:

- 16.3.1. 4 Lube Limited is the Australasian Distributor, Please contact 4 Lube Limited via their website at [www.4lube.co.nz](http://www.4lube.co.nz) or email them at [sales@4lube.co.nz](mailto:sales@4lube.co.nz).