

SUPPLIER



MATERIAL SAFETY DATA SHEET

GENERATED 03/15/2011, **REVISION** 06/19/2006, **SUPERCEDES REVISION** 11/30/1999,
DATE CREATED 03/28/1991

SECTION I - PRODUCT IDENTIFICATION Tungsten oxide WO₃, powder and pieces

PRODUCT NAME: Tungsten oxide WO₃, powder and pieces
PRODUCT CODE: T-MSDS0050
REFERENCE #: 1314-35-8

MANUFACTURER INFORMATION

COMPANY NAME: Materion Advanced Chemicals Inc.
1316 W. St. Paul Avenue
Milwaukee, WI 53233

EMERGENCY CONTACT: CHEMTREC (800)424-9300

ALTERNATE EMERGENCY CONTACT: Materion Advanced Chemicals Inc. (414)289-9800

CHEMICAL FAMILY: Metal oxide

CAS NUMBER: 1314-35-8

FORMULA: WO₃

MOLECULAR WEIGHT: 231.85

SYNONYMS

Tungsten oxide; tungsten trioxide; tungstic anhydride; C.I.77901; tungsten blue; tungstic oxide; woframite.

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION Tungsten oxide WO₃, powder and pieces

Hazardous Components (Chemical Name)	CAS #	Concentration	OSHA PEL	ACGIH TLV	Other Limits
Tungsten oxide	1314-35-8	0.0 -100.0 %	NE	5 mg/m3	C- 10mg/m3
See SECTION IX- ADDITIONAL COMMENTS FOR COSHH Regulations	NA	0.0 -100.0 %			

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Tungsten oxide WO₃, powder and pieces

<u>PHYSICAL STATES:</u>	<input type="checkbox"/> Gas	<input type="checkbox"/> Liquid	<input checked="" type="checkbox"/> Solid
<u>MELTING POINT:</u>	1473.00 C		
<u>BOILING POINT:</u>	N.A.		
<u>SPECIFIC GRAVITY (WATER = 1):</u>	7.16 gm/cc		
<u>VAPOR PRESSURE (VS. AIR OR MM HG):</u>	NA		
<u>VAPOR DENSITY (VS. AIR = 1):</u>	NA		
<u>EVAPORATION RATE (VS BUTYL ACETATE=1):</u>	NA		
<u>SOLUBILITY IN WATER:</u>	Insoluble		
<u>SOLUBILITY NOTES</u>			
<u>PERCENT VOLATILE:</u>	N.A.		
<u>APPEARANCE AND ODOR</u>			

Violet blue or yellow green, heavy powder or pieces, no odor
When heated, it turns dark orange.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Tungsten oxide WO₃, powder and pieces

<u>FLASH PT:</u>	N.A.	Method Used:	Unknown
<u>EXPLOSIVE LIMITS:</u>	LEL: NA	UEL:	NA
<u>EXTINGUISHING MEDIA</u>			

USE: Not applicable. Use suitable extinguishing agent for surrounding material and type of fire.

SPECIAL FIRE FIGHTING PROCEDURES

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

UNUSUAL FIRE AND EXPLOSION HAZARDS

When heated to decomposition, tungsten oxide may emit toxic fumes.
May have a violent reaction with lithium, ClF₃ and Cl₂.

HAZARDOUS COMBUSTION PRODUCTS

SECTION V - REACTIVITY DATA

Tungsten oxide WO₃, powder and pieces

STABILITY: Unstable [☐] Stable [☒]

CONDITIONS TO AVOID - INSTABILITY

None

INCOMPATIBILITY - MATERIALS TO AVOID

Lithium; ClF₃; Cl₂.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS

None recorded.

HAZARDOUS POLYMERIZATION: Will occur [☐] Will not occur [☒]

CONDITIONS TO AVOID - HAZARDOUS POLYMERIZATION

None

SECTION VI - HEALTH HAZARD DATA

Tungsten oxide WO₃, powder and pieces

HEALTH HAZARDS (ACUTE AND CHRONIC)

To the best of our knowledge the chemical, physical and toxicological properties of tungsten oxide have not been thoroughly investigated and recorded.

TUNGSTEN COMPOUNDS: Industrially, this element does not constitute an important health hazard. Exposure is related chiefly to the dust arising from the crushing and milling of the two chief ores of tungsten, namely sheelite and wolframite. (Sax, Dangerous Properties of Industrial Materials eighth edition)

INHALATION:

Acute: May cause irritation to the respiratory tract.

Chronic: No chronic health effects recorded.

INGESTION:

Acute: Moderately toxic by ingestion.

Chronic: Large overdoses may cause nervous system disturbances, and diarrhea.

SKIN:

Acute: May cause abrasive irritation.

Chronic: No chronic health effects recorded.

EYE:

Acute: May cause abrasive irritation.

Chronic: No chronic health effects recorded.

TARGET ORGANS: May affect the respiratory and central nervous system.

CARCINOGENICITY: NTP? Yes IARC Monographs? Yes OSHA Regulated? Yes

RECOMMENDED EXPOSURE LIMITS

See "Section II"

LD 50 / LC 50

orl-rat LDLO: 840 mg/kg

SIGNS AND SYMPTOMS OF EXPOSURE

INHALATION: May cause a red, dry throat, coughing and shortness of breath.

INGESTION: May cause diarrhea.

SKIN: May cause redness and itching.

EYE: May cause redness, itching and watering.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Pre-existing respiratory disorders.

EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention if symptoms persist.

INGESTION: Give 1-2 glasses of milk or water and induce vomiting; seek medical attention if symptoms persist. Never induce vomiting or give anything by mouth to an unconscious person.

SKIN: Remove contaminated clothing; brush material off skin; wash affected area with mild soap and water; seek medical attention if symptoms persist.

EYE: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Tungsten oxide WO₃, powder and pieces

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Wear appropriate respiratory and protective equipment specified in section VIII-control measures. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

WASTE DISPOSAL METHOD

Dispose of in accordance with local, state and federal regulations.

HAZARD LABEL INFORMATION:

Store in cool, dry area Store in tightly sealed container Wash thoroughly after handling

PRECAUTIONS TO BE TAKEN IN HANDLING

None

PRECAUTIONS TO BE TAKEN IN STORING

OTHER PRECAUTIONS

None

SECTION VIII- CONTROL MEASURES

Tungsten oxide WO₃, powder and pieces

PROTECTIVE EQUIPMENT SUMMARY - HAZARD LABEL INFORMATION:

NIOSH approved respirator Impervious gloves Safety glasses Clothes to prevent skin contact

RESPIRATORY EQUIPMENT (SPECIFY TYPE)

NIOSH - approved dust, mist respirator

EYE PROTECTION

Safety glasses

PROTECTIVE GLOVES

Rubber gloves

OTHER PROTECTIVE CLOTHING

Protective gear suitable to prevent contamination

VENTILATION

Local Exhaust: To maintain concentration at or below the TLV

Special: None

Mechanical (Gen): Recommended

Other: None

WORK/HYGIENIC/MAINTENANCE PRACTICES

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

SECTION IX - ADDITIONAL COMMENTS
Tungsten oxide WO₃, powder and pieces

EH40 Occupational Exposure Limits

TUNGSTEN & INSOLUBLE COMPOUNDS

Maximum Exposure Limit: NE

Occupational Exposure Standard: 5 mg/m³

10 mg/m³ Short-term Exposure Limit

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