

SUPPLIER



MATERIAL SAFETY DATA SHEET

GENERATED 03/15/2011, **REVISION** 04/19/2000, **DATE CREATED** 12/18/1992

SECTION I - PRODUCT IDENTIFICATION

Tungsten phosphide, powder and pieces

PRODUCT NAME: Tungsten phosphide, powder and pieces
PRODUCT CODE: T-MSDS0169
REFERENCE #: 12037-70-6

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 phosphide

CAS NUMBER: 12037-70-6

FORMULA: WP

MOLECULAR WEIGHT: 214.82

SYNONYMS

Tungsten phosphide

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Tungsten phosphide, powder and pieces

Hazardous Components (Chemical Name)	CAS #	Concentration	OSHA PEL	ACGIH TWA	Other Limits
Tungsten phosphide	12037-70-6	0.0 -100.0 %	NE	5 mg(W)/ m3	NE

Hazardous Components (Chemical Name)	CAS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
Tungsten phosphide	12037-70-6			10 mg(W)/m3	

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Tungsten phosphide, powder and pieces

<u>PHYSICAL STATES:</u>	<input type="checkbox"/> Gas	<input type="checkbox"/> Liquid	<input checked="" type="checkbox"/> Solid
<u>MELTING POINT:</u>	N.A.		
<u>BOILING POINT:</u>	N.A.		
<u>SPECIFIC GRAVITY (WATER = 1):</u>	8.5		
<u>VAPOR PRESSURE (VS. AIR OR MM HG):</u>			
<u>VAPOR DENSITY (VS. AIR = 1):</u>			
<u>EVAPORATION RATE (VS BUTYL ACETATE=1):</u>			
<u>SOLUBILITY IN WATER:</u>	Insoluble		
<u>SOLUBILITY NOTES</u>			
<u>PERCENT VOLATILE:</u>	N.A.		
<u>APPEARANCE AND ODOR</u>			

Gray powder or pieces, no odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Tungsten phosphide, powder and pieces

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

USE: Not applicable. Use suitable extinguishing agent for surrounding materials 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 phosphide may emit toxic oxides of phosphorus. If exposed to HF + HNO₃ it may emit flammable phosphine gas.

HAZARDOUS COMBUSTION PRODUCTS

SECTION V - REACTIVITY DATA **Tungsten phosphide, powder and pieces**

STABILITY: Unstable [☐] Stable [☒]

CONDITIONS TO AVOID - INSTABILITY

None

INCOMPATIBILITY - MATERIALS TO AVOID

HF + HNO₃

HAZARDOUS DECOMPOSITION OR BYPRODUCTS

Oxides of phosphorus and phosphine

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

CONDITIONS TO AVOID - HAZARDOUS POLYMERIZATION

None

SECTION VI - HEALTH HAZARD DATA **Tungsten phosphide, powder and pieces**

HEALTH HAZARDS (ACUTE AND CHRONIC)

To the best of our knowledge the chemical, physical and toxicological properties of tungsten phosphide 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, scheelite and wolframite. Heavy exposure to the dust or the large amounts of the soluble compounds produces changes in body weight, behavior, blood cells, choline esterase activity and sperm in experimental animals. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Phosphides are particularly dangerous because they tend to decompose to the very toxic phosphine upon contact with moisture or acids. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

INHALATION:

Acute: Inhalation of dust or powder may cause irritation to the respiratory system.

Chronic: Inhalation of finely divided powder may cause pulmonary fibrosis.

INGESTION:

Acute: May cause nausea, vomiting, abdominal pain and diarrhea.

Chronic: No chronic health effects recorded.

SKIN:

Acute: May cause irritation.

Chronic: No chronic health effects recorded.

EYE:

Acute: May cause irritation.

Chronic: May cause visual disturbances.

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

CARCINOGENICITY: NTP? No IARC Monographs? No OSHA Regulated? No

RECOMMENDED EXPOSURE LIMITS

See "Section II"

LD 50 / LC 50

No toxicity data recorded

SIGNS AND SYMPTOMS OF EXPOSURE

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

INGESTION: May cause nausea, vomiting, abdominal pain and diarrhea.

SKIN: May cause red, itching and burning.

EYE: May cause red, 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 phosphide, 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 phosphide, 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 cartridge respirator

EYE PROTECTION

Safety glasses

PROTECTIVE GLOVES

Neoprene gloves

OTHER PROTECTIVE CLOTHING

Protective gear suitable to prevent contamination

VENTILATION

Local Exhaust: Local exhaust ventilation may be necessary to control any air contaminants to within their PELs or TLVs during the use of this product.

Special: None

Mechanical (Gen): Good general ventilation is recommended.

Other: Handle and store in an inert gas such as argon

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 phosphide, powder and pieces

No data available.

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