

SUPPLIER



MATERIAL SAFETY DATA SHEET

GENERATED 03/15/2011, **REVISION** 05/25/2007, **SUPERCEDES REVISION** 12/04/1996,
DATE CREATED 07/21/1986

SECTION I - PRODUCT IDENTIFICATION

Zirconium metal, pieces

PRODUCT NAME: Zirconium metal, pieces

PRODUCT CODE: Z-MSDS0011

REFERENCE #: 7440-67-7

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

CAS NUMBER: 7440-67-7

FORMULA: Zr

MOLECULAR WEIGHT: 91.22

SYNONYMS

Zirconium metal, zircat

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Zirconium metal, pieces

Hazardous Components (Chemical Name)	CAS #	Concentration	OSHA PEL	ACGIH TWA	Other Limits

Zirconium metal	7440-67-7	0.0 -100.0 %	5 mg/m3	5 mg/m3	STEL 10mg/m3
See SECTION IX- ADDITIONAL COMMENTS FOR COSHH Regulations	NA	0.0 -100.0 %			
Hazardous Components (Chemical Name)	CAS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
Zirconium metal	7440-67-7			10 mg/m3	
See SECTION IX- ADDITIONAL COMMENTS FOR COSHH Regulations	NA				

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Zirconium metal, pieces

<u>PHYSICAL STATES:</u>	<input type="checkbox"/> Gas	<input type="checkbox"/> Liquid	<input checked="" type="checkbox"/> Solid
<u>MELTING POINT:</u>	1850.00 C - 1852.00 C		
<u>BOILING POINT:</u>	4377.00 C		
<u>SPECIFIC GRAVITY (WATER = 1):</u>	6.506 at 20.0 C		
<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>			
insoluble in cold acids			
<u>PERCENT VOLATILE:</u>	N.A.		
<u>APPEARANCE AND ODOR</u>			

Silver-grey metallic pieces, no odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Zirconium metal, pieces

FLASH PT:

N.A. Method Used: Unknown

EXPLOSIVE LIMITS:

LEL: NE UEL: NE

EXTINGUISHING MEDIA

AUTOIGNITION TEMPERATURE: 392F (200C)

USE: Class D or other metal exitinguishing agent.

DO NOT USE: water, carbon dioxide or halocarbon exitinguishing agent.

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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.

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UNUSUAL FIRE AND EXPLOSION HAZARDS

Spontaneously combustible in dry powder form.

Flammable and explosive as dust or powder, also in the form of borings and shavings.

Zirionium metal is a very dangerous fire hazard in the form of dust when exposed to heat, flame or by chemical reaction with oxidizing agents.

May be an explosion hazard in the form of dust by chemical reaction with air, alkali hydroxides, alkali metal chromates, dichromates, molybdates, sulfates, tungstates, borax, CCl₄, Copper oxide, lead, lead oxide, phosphorous, KClO₃, KNO₃, nitrylfluoride.

May be extremely sensitive to shock and static electricity cause spontaneuos ignition.

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HAZARDOUS COMBUSTION PRODUCTS**SECTION V - REACTIVITY DATA****Zirconium metal, pieces****STABILITY:**

Unstable [] Stable [X]

CONDITIONS TO AVOID - INSTABILITY

None

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INCOMPATIBILITY - MATERIALS TO AVOID

Strong oxidizing agents, air, alkali hydroxides, alkali metal chromates, dichromates, molybdates, sulfates, tungstates, borax, CCl₄, copper oxide, lead, lead oxide, phosphorus, KClO₃, KNO₃, nitrylfluoride and acids

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HAZARDOUS DECOMPOSITION OR BYPRODUCTS

None recorded

HAZARDOUS POLYMERIZATION:

Will occur []
[X]

Will not occur

CONDITIONS TO AVOID - HAZARDOUS POLYMERIZATION

None

SECTION VI - HEALTH HAZARD DATA
Zirconium metal, pieces

HEALTH HAZARDS (ACUTE AND CHRONIC)

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

Zirconium compounds are not an important industrial poison. Most zirconium compounds in common use are insoluble and considered inert. Pulmonary granuloma in zirconium workers has been reported.

INHALATION:

Acute: May cause irritation to the respiratory tract, mucous membranes or the nose and throat.

Chronic: No chronic health effects recorded.

INGESTION:

Acute: May cause irritation to the gastrointestinal tract.

Chronic: No chronic health effects recorded.

SKIN: Acute: May cause irritation.

Chronic: May cause skin granulomas.

EYE:

Acute: May cause irritation.

Chronic: No chronic health effects recorded.

TARGET ORGANS: May affect the respiratory system and skin.

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 red, dry throat, coughing, sneezing and difficulty breathing.

INGESTION: May cause burning sensation.

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 Zirconium metal, 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

Handle and store under argon

PRECAUTIONS TO BE TAKEN IN STORING

OTHER PRECAUTIONS

If particle size is less than 9 microns handle and store under 30% water. If particle size is greater than 9 microns but less than 250 microns handle and store under argon.

SECTION VIII - CONTROL MEASURES
Zirconium metal, pieces

PROTECTIVE EQUIPMENT SUMMARY - HAZARD LABEL INFORMATION:

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

RESPIRATORY EQUIPMENT (SPECIFY TYPE)

NIOSH/MSHA approved respirator

EYE PROTECTION

Safety glasses

PROTECTIVE GLOVES

Rubber gloves

OTHER PROTECTIVE CLOTHING

Protective gear suitable to prevent contamination

VENTILATION

Local Exhaust: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Special: Handle under argon atmosphere

Mechanical (Gen): Not 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
Zirconium metal, pieces

Control of Substances Hazardous to Health Regulations
EH40 Occupational Exposure Limits

Maximum Exposure Limit: NE

Occupational Exposure Standard: 5 mg/m³

10 mg/m³ Short-term Exposure Limit

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