



SAFETY DATA SHEET

MATERION

1. Identification

Product identifier Zirconium powder

Other means of identification

SDS number 2NA

Materion Code 2NA

CAS number 7440-67-7

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Materion Advanced Chemicals Inc.

Address 407 N 13th Street
1316 W. St. Paul Avenue
Milwaukee, WI 53233
United States

Telephone 414.212.0290

E-mail advancedmaterials@materion.com

Contact person Laura Hamilton

Emergency phone number Chemtrec 800.424.9300

2. Hazard(s) identification

Physical hazards Pyrophoric solids Category 1
Substances and mixtures which, in contact with water, emit flammable gases Category 1

Health hazards Not classified.

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Catches fire spontaneously if exposed to air. In contact with water releases flammable gases which may ignite spontaneously.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not allow contact with air. Do not allow contact with water. Handle and store contents under inert gas. Protect from moisture. Wear protective gloves/eye protection/face protection.

Response Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.

Storage Store in a dry place. Store in a closed container. Store contents under inert gas.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Zirconium powder		7440-67-7	100

4. First-aid measures

Inhalation	Move into fresh air and keep at rest. If breathing has stopped, perform artificial respiration and obtain medical help. Consult a physician for specific advice.
Skin contact	Wash off with soap and plenty of water. Contact physician if irritation continues.
Eye contact	Flush thoroughly with water. If irritation occurs, get medical assistance.
Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth thoroughly. Consult a physician.
Most important symptoms/effects, acute and delayed	Not available.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media	Dry sand. Dry chemicals. Alcohol resistant foam.
Unsuitable extinguishing media	Do not use water jet.
Specific hazards arising from the chemical	In contact with water releases flammable gases which may ignite spontaneously.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid generation and spreading of dust. Ensure adequate ventilation. Avoid contact with skin or inhalation of spillage, dust or vapor. Keep public away from danger area.
Methods and materials for containment and cleaning up	Avoid the generation of dusts during clean-up. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Use approved industrial vacuum cleaner for removal. Sweep up or vacuum up spillage and collect in suitable container for disposal.
Environmental precautions	Prevent entry into drains.

7. Handling and storage

Precautions for safe handling	Avoid contact with moist air. Handle under inert gas atmosphere.
Conditions for safe storage, including any incompatibilities	Not available.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Material	Type	Value
Zirconium powder (CAS 7440-67-7)	STEL	10 mg/m ³
	TWA	5 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

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Zirconium powder (CAS 7440-67-7)	STEL	10 mg/m ³
	TWA	5 mg/m ³

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Not available.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Use protective gloves.

Other Protective overgarments or work clothing must be worn by persons who may become contaminated with particulate during activities. Wear fire/flamm resistant/retardant clothing.

Respiratory protection When airborne exposures exceed or have the potential to exceed the occupational exposure limits, approved respirators must be used as specified by an Industrial Hygienist or other qualified professional. Respirator users must be medically evaluated to determine if they are physically capable of wearing a respirator. Quantitative and/or qualitative fit testing and respirator training must be satisfactorily completed by all personnel prior to respirator use. Users of tight fitting respirators must be clean shaven on those areas of the face where the respirator seal contacts the face. Use pressure-demand airline respirators when performing jobs with high potential exposures such as changing filters in a baghouse air cleaning device.

Thermal hazards Not available.

9. Physical and chemical properties

Appearance Powder.

Physical state Solid.

Form Not available.

Color Not available.

Odor None.

Odor threshold Not available.

pH Not available.

Melting point/freezing point 3374.6 °F (1857 °C)

Initial boiling point and boiling range 6470.6 °F (3577 °C)

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure < 0.0000001 kPa (77 °F (25 °C))

Vapor density Not available.

Relative density Not available.

Solubility(ies)

Solubility (water) Insoluble

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature > 392 °F (> 200 °C)

Decomposition temperature Not available.

Viscosity Not available.

Other information

Molecular formula Zr

Molecular weight 91.22 g/mol

10. Stability and reactivity

Reactivity	In contact with water releases flammable gas.
Chemical stability	Material is stable under normal conditions. Water reactive material.
Possibility of hazardous reactions	Not available.
Conditions to avoid	Moisture.
Incompatible materials	Water. Strong acids. Strong oxidizing substances. Hydrogen fluoride. Oxygen. Phosphorus.
Hazardous decomposition products	Carbon oxides. Irritating and/or toxic fumes and gases may be emitted upon the product's decomposition.

11. Toxicological information

Information on likely routes of exposure

Inhalation Not available.

Skin contact Not available.

Eye contact Not available.

Ingestion Not available.

Symptoms related to the physical, chemical and toxicological characteristics Not available.

Information on toxicological effects

Acute toxicity Not available.

Skin corrosion/irritation Not available.

Serious eye damage/eye irritation Not available.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization Not available.

Germ cell mutagenicity Not available.

Carcinogenicity

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity Not available.

Specific target organ toxicity - single exposure Not available.

Specific target organ toxicity - repeated exposure Not available.

Aspiration hazard Not available.

12. Ecological information

Ecotoxicity No ecotoxicity data noted for the ingredient(s).

Persistence and degradability Not available.

Bioaccumulative potential Not available.

Mobility in soil Not available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions	Dispose of contents/container in accordance with local/regional/national/international regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Not available.

14. Transport information

DOT

UN number	UN2008
UN proper shipping name	ZIRCONIUM POWDER, DRY
Transport hazard class(es)	
Class	4.1
Subsidiary risk	-
Label(s)	3
Packing group	III
Special precautions for user	Not available.
Special provisions	B1, IB2
Packaging exceptions	150
Packaging non bulk	203
Packaging bulk	242

IATA

UN number	UN2008
UN proper shipping name	ZIRCONIUM POWDER, DRY
Transport hazard class(es)	
Class	4.1
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	3L
Special precautions for user	Not available.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

UN number	UN2008
UN proper shipping name	ZIRCONIUM POWDER, DRY
Transport hazard class(es)	
Class	4.1
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-D
Special precautions for user	Not available.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations

All components are on the U.S. EPA TSCA Inventory List.

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

This substance is on the TSCA inventory and is designated "active".

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

Classified hazard categories

Flammable (gases, aerosols, liquids, or solids)

Self-heating

In contact with water emits flammable gas

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

16. Other information, including date of preparation or last revision

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Version #	01
Disclaimer	Not available.