



Stanford Advanced Materials  
Address : 23661 Birtcher Dr.,  
Lake Forest, CA 92630 U.S.A.  
Tel: (949) 407-8904  
Fax: (949) 812-6690

In Case Of Emergency Call  
(949) 407-8904  
(This telephone number is available  
24 hours per day, 7 days per week.)

## Zirconium Nickel Alloy Safety Data Sheet

### 1. Product and Company

Product name: Zirconium Nickel Alloy  
Synonym: Zr/Ni  
CAS-No.: Zirconium – 7440-67-7 Nickel –  
7440-02-0  
Company: Stanford Advanced Materials  
Address : 23661 Birtcher Dr.,  
Lake Forest, CA 92630 U.S.A.  
Telephone: (949) 407-8904  
Fax: (949) 812-6690

HMIS Rating	
Health	1
Flammability	3
Reactivity	1
Personal Protection	E

Emergency telephone number

Emergency Phone #: (949) 407-8904  
(This telephone number is available 24 hours per day, 7 days  
per week.)

### 2. Hazards

#### GHS Label elements

GHS Classification: Specific target organ toxicity - repeated exposure (Category 1), H372  
Carcinogenicity (Category 2), H351  
Self-heating – (Category 1), H251  
Combustible Dust

Pictogram(s)



Signal word **DANGER**

Hazard statement(s)

- H251 Self-heating: May catch fire.
- H351 Suspected of causing cancer.
- H372 Causes damage to respiratory tract.

Precautionary statement(s)

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P240 Ground/bond container and receiving equipment.
- P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
- P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
- P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312 Call a POISON CENTER or doctor/ physician if you feel unwell.
- P322 Specific measures (see supplemental first aid instructions on this label).
- P330 Rinse mouth.
- P363 Wash contaminated clothing before reuse.
- P501 Dispose of contents/ container to an approved waste disposal plant.

**Hazards not otherwise classified (HNOC) or not covered by GHS**

None

**3. Composition/Ingredients**

**Substance**

Molecular weight: Not Applicable  
 CAS-No.: See Below

Material	CAS	%	OSHA	ACGIH
Zirconium	7440-67-7	25-70%	5 mg/m <sup>3</sup> as Zr	5 mg/m <sup>3</sup> as Zr
Nickel	7440-02-0	25-70%	1 mg/m <sup>3</sup> as Ni	1 mg/m <sup>3</sup> as Ni
Hafnium	7440-58-6	0-2.5%	0.5 mg/m <sup>3</sup> as Hf	0.5 mg/m <sup>3</sup> as Hf

**4. First Aid**

**First Aid For Eye:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

**First Aid For Skin:** In case of contact, flush skin with water. Wash clothing before reuse. Call a physician if irritation occurs.

**First Aid For Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

**First Aid For Ingestion:** If swallowed, call a physician immediately.

## 5. Fire Data

Flammability: Non-Flammable

Flash Point: Not Applicable

Auto Ignition: 400°C

Flammable Limits: Not Applicable

Extinguishing Media: Use dry chemical (dolomite-powdered limestone). Do not use water, carbon dioxide or halocarbon extinguishers.

Fire Fighting Procedure: Do not apply water to burning material. Full emergency equipment with self-contained breathing apparatus must be worn by firefighters. During a fire, irritating and toxic gases and aerosols may be generated by thermal decomposition and combustions.

Fire/Explosion Hazards: Flammable solid. Small fires isolate and contain with dolomite and allow to burn. Large fires, contain and smother with dolomite. CAUTION! Fire may reignite after having been extinguished.

## 6. Accidental Release

Spill Or Leak Procedures: Utilize recommended protective clothing and equipment. Clean spills in a manner that does not disperse dust into the air. Spill area can be washed with water. Collect wash water for approved disposal. Keep from entering water or ground water.

## 7. Handling And Storage

Storage Temperatures: Store at ambient temperature.

Shelf Life: Unlimited in tightly sealed container

Special Sensitivity: Sensitive to friction and static discharge.

Handling/Storage Precautions: Avoid breathing dust. Avoid getting in eyes or on skin. Wash thoroughly after handling. Store in a dry place away from direct sunlight, heat and incompatible materials. Reseal containers after use. Store away from food and beverages.

## 8. Exposure Controls/Personal Protection

Eye Protection: Safety glasses or goggles.

Skin Protection: PVC gloves with impervious boots, apron or coveralls. Wash hands and face before eating, drinking or using tobacco.

Respirator: Work ambient concentrations should be monitored and if the recommended exposure limit is exceeded, a NIOSH/MSHA approved dust respirator must be worn.

Ventilation: Use local ventilation if dusting is a problem, to maintain air levels below the recommended exposure limit.

Additional Measures: Emergency showers and eye wash stations should be available. Educate and train employees in the safe handling of hazardous chemicals.

## 9. Physical And Chemical Properties

Physical Form: Fine Powder

Color: Gray

Odor: Odorless

Molecular Weight: Not Established

Boiling Point: Not Established  
Melting/Freezing Point: Not Established  
Solubility In Water: Insoluble  
Specific Gravity: 8.18

## 10. Stability And Reactivity

Stability: Stable  
Hazardous Polymerization: Will not occur.  
Incompatibilities: Oxidizing agents, acids and halogenated hydrocarbons.  
Instable Conditions: Excessive temperatures (see incompatibilities).  
Decomposition Temperature: Not known.  
Decomposition Products: Unknown.

## 11. Toxicological Information

RTECS Number: Zirconium ZH7070000 Nickel QR 5950000  
Routes of Exposure: Eye contact. Ingestion. Inhalation. Skin contact.  
Toxicity Data: See Individual data for Zirconium and Nickel  
Chronic Toxic Effects: Repeated or prolong exposure to Nickel can affect the heart, liver, kidneys, and central nervous system. Repeated and prolong exposure to chromium compounds can result in pulmonary and dermal sensitization, pulmonary fibrosis, and kidney and liver damage.  
Acute Toxic Effects: Nickel dusts can cause skin irritation and sensitization ("Nickel Itch"), which is characterized by burning, itching, and skin eruptions. All airborne Nickel dusts should be regarded as carcinogenic. Inhalation will cause irritation to the lungs and mucus membrane. Irritation to the eyes will cause watering and redness. Reddening, scaling, and itching are characteristics of skin inflammation. Follow safe industrial hygiene practices and always wear protective equipment when handling this compound.

## 12. Ecological Information

Ecotoxicity: Not available at this time.

## 13. Disposal Considerations

Waste Disposal Method: Waste disposal should be in accordance with existing federal, state and local environmental regulations.

## 14. Transportation Information

Proper Shipping Name: Metal Powders, Flammable, N.O.S. (Zirconium/Nickel Alloy)  
UN Number: 3089  
Class: 4.1  
P.G.: II  
Label Code: 4.1

## 15. Regulatory Information

OSHA Status: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA Chemical Inventory: This compound is on the EPA Toxic Substance Control Act (TSCA) Inventory List

California Proposition 65: Nickel and nickel compounds are known to the State of California to cause cancer.

SARA 313 Title III:

Section 320 Extremely Hazardous Substances: None

Section 311/312 Hazardous Categories: Fire hazard.

Section 313 Toxic Chemicals: Yes, nickel.

## 16. Other Information

Prepared By: Michael Richard

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