

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Name:** Invar Alloy Powder

**CAS #:**

**Relevant identified uses of the substance:** Scientific research and development

**Supplier details:**

Stanford Advanced Materials

E-mail: sales@samaterials.com

Tel: (949) 407-8904

Address: 23661 Birtcher Dr., Lake Forest, CA 92630 U.S.A.

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## SECTION 2. HAZARDS IDENTIFICATION

GHS Classification (29 CFR 1910.1200):

Sensitization - skin, category 1B, Carcinogenicity, category 2.

Signal Word: Warning

Hazard Statements:

H317 May cause an allergic skin reaction

H351 Suspected of causing cancer.

Precautionary Statements:

P201 Obtain special instructions before use

P202 Do not handle until all safety precautions have been read and understood

P261 Avoid breathing dust or fume

P272 Contaminated clothing should not be allowed out of the workplace

P280 Wear protective gloves/protective clothing

P302+P352 IF ON SKIN: wash with plenty of soap and water

P333+P313 If skin irritation or rash occurs: Get medical advice/attention

P308+P313 IF exposed or concerned: Get medical advice/attention

P363 Wash contaminated clothing before reuse

P405 Store locked up P501 Dispose of contents/container in accordance with local, state or federal regulations.

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## **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

CAS# Description:

7439-89-6 Iron

7440-02-0 Nickel

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## **SECTION 4. FIRST AID MEASURES**

General Measures: Remove patient from area of exposure.

INHALATION: Remove to fresh air, keep warm and quiet, give oxygen if breathing is difficult. Seek medical attention.

INGESTION: Rinse mouth with water. Do not induce vomiting. Seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

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

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

Most Important Symptoms/Effects, Acute and Delayed: May cause irritation. See section 11 for more information.

Indication of Immediate Medical Attention and Special Treatment: No other relevant information available.

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing Media: Use Class D dry powder extinguishing agent.

Unsuitable Extinguishing Media: Do not use water.

Specific Hazards Arising from the Material: Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source, is a potential dust explosion hazard. May emit toxic metal oxide fumes under fire conditions.

Special Protective Equipment and Precautions for Firefighters: Full face, self-contained breathing apparatus and full protective clothing when necessary.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal Precautions, Protective Equipment, and Emergency Procedures: Wear appropriate respiratory and protective equipment specified in section 8. Isolate spill area and provide ventilation.

Avoid breathing dust or fume. Avoid contact with skin and eyes. Eliminate all sources of ignition.

Methods and Materials for Containment and Cleaning Up: Avoid dust formation. Sweep or scoop up. Place in a properly labeled container for further handling and disposal.

Environmental Precautions: Do not allow to enter drains or to be released to the environment.

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## **SECTION 7. HANDLING AND STORAGE**

Precautions for Safe Handling: Avoid creating dust. Avoid breathing dust or fumes. Provide adequate ventilation if dusts are created. Avoid contact with skin and eyes. Wash thoroughly before eating or

smoking. See section 8 for information on personal protection equipment.

Conditions for Safe Storage: Store in a cool, dry area. Store material tightly sealed in properly labeled

containers. See section 10 for more information on incompatible materials.

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Exposure Limits: OSHA/PEL: ACGIH/TLV:

Nickel 1 mg/m<sup>3</sup> 1.5 mg/m<sup>3</sup>

Iron No exposure limit established No exposure limit established

Engineering Controls: Handle in a controlled, enclosed environment. Ensure adequate ventilation to maintain exposures below occupational limits. Whenever possible the use of local exhaust ventilation

or other engineering controls is the preferred method of controlling exposure to airborne dust and fume to meet established occupational exposure limits. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not

blow dust off clothing or skin with compressed air.

Individual Protection Measures, Such as Personal Protective Equipment:

Respiratory Protection: Use NIOSH approved respirator.

Eye Protection: Safety glasses

Skin Protection: Wear impermeable gloves; protective work clothing as necessary.

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## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Form: Powder

Color: Gray

Odor: Odorless

Odor Threshold: Not determined

pH: N/A

Melting Point: ~1425 oC

Boiling Point: No data

Flash Point: N/A

Evaporation Rate: N/A

Flammability: No data

Upper Flammable Limit: No data

Lower Flammable Limit: No data

Vapor Pressure: No data

Vapor Density: N/A

Relative Density (Specific Gravity): ~8.1 g/cc

Solubility in H<sub>2</sub>O: Insoluble

Partition Coefficient (n-octanol/water): Not determined

Autoignition Temperature: No data

Decomposition Temperature: No data

Viscosity: N/A

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## **SECTION 10. STABILITY AND REACTIVITY**

Reactivity: No specific test data available.

Chemical Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Reacts with strong acids and caustics to form flammable and explosive hydrogen gas. Contact with sulfur may cause evolution of heat. Contact with halogenated compounds and oxidizers may produce violent reactions and fires. Hazardous polymerization will not occur.

Conditions to Avoid: Avoid creating a dust cloud.

Incompatible Materials: Oxidizers, strong acids, halogenated compounds.

Hazardous Decomposition Products: Metal oxides, carbon oxides, nitrogen oxides.

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Likely Routes of Exposure: Inhalation, skin, eyes.

Symptoms of Exposure: Fines/dusts may irritate lungs, eyes or abraded skin. Inhalation of metal oxide

fumes due to heating beyond the boiling point in an oxidizing atmosphere, such as when smelting or welding, may cause substernal chest pain, cough, dyspnea and flu-like symptoms. The respiratory

symptoms generally disappear in the exposed individual within 1-4 days.

Acute and Chronic Effects:

Nickel: The most common harmful health effect of metallic nickel in humans is an allergic skin reaction

in those who are sensitive to nickel. Although nickel compounds are known human carcinogens, the evidence suggests that the relatively insoluble metallic nickel is less likely to present a carcinogenic hazard than are the nickel compounds that tend to release proportionately more nickel ion.

Iron: If inhaled, iron is a local irritant to the lung and gastrointestinal tract. Inhalation of large amounts may cause iron pneumoconiosis. Chronic inhalation of finely divided powder may cause chronic iron poisoning and pathological deposition of iron in the body tissue. Ingestion may cause vomiting, diarrhea, pink urine, black stool, and liver damage.

Acute Toxicity: No available information

Carcinogenicity:

Nickel: NTP: R - reasonably anticipated to be a human carcinogen IARC: 2B - possibly carcinogenic to

humans

To the best of our knowledge the chemical, physical and toxicological characteristics of the substance

are not fully known.

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## **SECTION 12. ECOLOGICAL INFORMATION**

Ecotoxicity: No data

Persistence and Degradability: No data

Bioaccumulative Potential: No data

Mobility in Soil: No data

Other Adverse Effects: No further relevant information available.

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste Disposal Method:

Product: Dispose of in accordance with Federal, State and Local regulations.

Packaging: Dispose of in accordance with Federal, State and Local regulations.

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## **SECTION 14. TRANSPORT INFORMATION**

Shipping Regulations: Not regulated

UN Number: N/A

UN Proper Shipping Name: N/A Transport Hazard Class: N/A

Packing Group: N/A

Marine Pollutant: No

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## **SECTION 15. REGULATORY INFORMATION**

TSCA: All components are listed.

Regulation (EC) No 1272/2008 (CLP): Sensitization - skin, category 1B, Carcinogenicity, category 2.

WHMIS 2015 Classification: Respiratory or skin sensitization, Carcinogenicity.

HMIS Ratings: Health: 2\*(chronic), Flammability:1, Physical: 0

NFPA Ratings: Health: 2, Flammability: 1, Instability: 0

Chemical Safety Assessment: A chemical safety assessment has not been carried out.

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## **SECTION 16. OTHER INFORMATION**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.