

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Iron Nanowires, Research Grade

Catalog Number: NovaWire-Fe-80

Formula: Fe

Diameter: ~ 80 nm

Length: ~ 10  $\mu$ m

Supplier: Novarials Corporation  
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## 2. HAZARDS IDENTIFICATION

### Emergency Overview

#### OSHA Hazards

Flammable solid

#### GHS Classification

Flammable solids (Category 1)

#### GHS Label elements, including precautionary statements

Pictogram



Signal word     Danger

Hazard statement(s)

H228                     Flammable solid.

Precautionary statement(s)

P210                     Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

### NFPA Ratings

Health Hazard:             0

Fire Hazard:                 3

Reactivity Hazard:         3

**HMIS Ratings**

**Health Hazard:** 0  
**Chronic Health Hazard:**  
**Flammability:** 3  
**Physical Hazard:** 3

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.  
**Skin** May be harmful if absorbed through skin. May cause skin irritation.  
**Eyes** May causes eye irritation.  
**Ingestion** May be harmful if swallowed.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms: Iron  
Formula: Fe  
Molecular Weight: 55.85 g/mol

Component	Concentration
<b>Iron</b>	
CAS-No.	7439-89-6
EC-No.	231-096-4
<b>Water</b>	
CAS-No.	7732-18-5
EC-No.	231-791-2

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**4. FIRST AID MEASURES****General advice**

Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water. Consult a physician.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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**5. FIREFIGHTING MEASURES****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**Hazardous combustion products**

Hazardous decomposition products formed under fire conditions – Iron oxides

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**6. ACCIDENTAL RELEASE MEASURES****Personal precautions**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Methods and materials for containment and cleaning up**

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations. Keep in suitable, closed containers for disposal.

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**7. HANDLING AND STORAGE****Precautions for safe handling**

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

Keep away from sources of ignition – No smoking.

Take measurement to prevent the build up of electrostatic charge.

**Conditions for safe storage**

Store in cool place. Keep container tightly closed in a cool, dry and well-ventilated place.

Air sensitive. Heat sensitive. Packaged under inert gas.

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Personal protective equipment****Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respiration type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye/Face protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Body protection**

Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### **Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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

#### **APPEARANCE**

Form suspension  
Color black

#### **Safety data**

pH no data available  
Melting point/freezing point no data available  
Boiling point no data available  
Flash point no data available  
Flammability (solid, gas) no data available  
Ignition temperature no data available  
Auto ignition temperature no data available  
Lower explosion limit no data available  
Upper explosion limit no data available  
Vapour pressure no data available  
Density no data available  
Water solubility no data available  
Partition coefficient: n-octanol/water no data available  
Relative vapour density no data available  
Odour no data available  
Odour Threshold no data available  
Evaporation rate no data available

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

#### **Reactivity**

no data available

#### **Chemical stability**

Stable under recommended storage conditions.

#### **Possibility of hazardous reactions**

no data available

#### **Conditions to avoid**

Heat, flames and sparks. Extremes of temperature and direct sunlight.

#### **Materials to avoid**

Acids, Oxygen, Strong oxidizing agents, Halogens, Phosphorus

#### **Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions – Iron oxides  
Other decomposition products -no data available

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### **11. TOXICOLOGICAL INFORMATION**

## **Acute toxicity**

### **Oral LD50**

no data available

### **Inhalation LC50**

no data available

### **Dermal LD50**

no data available

### **Other information on acute toxicity**

no data available

## **Skin corrosion/irritation**

no data available

## **Serious eye damage/eye irritation**

no data available

## **Respiratory or skin sensitization**

no data available

## **Germ cell mutagenicity**

no data available

## **Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

## **Reproductive toxicity**

no data available

## **Specific target organ toxicity -single exposure (Globally Harmonized System)**

no data available

## **Specific target organ toxicity -repeated exposure (Globally Harmonized System)**

no data available

## **Aspiration hazard**

no data available

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## **12. ECOLOGICAL INFORMATION**

### **Toxicity**

no data available

### **Persistence and degradability**

no data available

### **Bioaccumulative potential**

no data available

**Mobility in soil**  
no data available

**PBT and vPvB assessment**  
no data available

**Other adverse effects**  
no data available

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### 13. DISPOSAL CONSIDERATIONS

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber, but exert extra care in igniting as this material is highly flammable.

**Contaminated packaging**

Dispose of as unused product.

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### 14. TRANSPORT INFORMATION

**DOT (US)**

UN3089 Class: 4.1 Packing group: III  
Proper shipping name: Metal suspension, flammable, n.o.s.  
Reportable Quantity (RQ): 100 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN3089 Class: 4.1 Packing group: III EMS-No: F-G, S-G  
Proper shipping name: Metal suspension, flammable, n.o.s.  
Marine pollutant: No

**IATA**

UN3089 Class: 4.1 Packing group: III  
Proper shipping name: Metal suspension, flammable, n.o.s.

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### 15. REGULATORY INFORMATION

**OSHA Hazards**

Flammable solid.

**SARA 302 Components**

Not required

**SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Fire Hazard

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

Iron	CAS-No. 7439-89-6
Water	CAS-No. 7732-18-5

**New Jersey Right To Know Components**

Iron	CAS-No. 7439-89-6
Water	CAS-No. 7732-18-5

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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**16. DISCLAIMER**

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