

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Iron(III) nitrate nonahydrate

Product Number : 216828  
Brand : Sigma-Aldrich

Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Oxidizer, Carcinogen, Irritant

##### GHS Classification

Oxidizing solids (Category 3)  
Acute toxicity, Oral (Category 5)  
Skin irritation (Category 2)  
Eye irritation (Category 2A)  
Specific target organ toxicity - single exposure (Category 3)

##### GHS Label elements, including precautionary statements

Pictogram



Signal word : Warning

Hazard statement(s)

H272 : May intensify fire; oxidiser.  
H303 : May be harmful if swallowed.  
H315 : Causes skin irritation.  
H319 : Causes serious eye irritation.  
H335 : May cause respiratory irritation.

Precautionary statement(s)

P220 : Keep/Store away from clothing/ combustible materials.  
P261 : Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

##### HMIS Classification

Health hazard: 2  
Chronic Health Hazard: \*  
Flammability: 0

<b>Physical hazards:</b>	1
<b>NFPA Rating</b>	
<b>Health hazard:</b>	2
<b>Fire:</b>	0
<b>Reactivity Hazard:</b>	1
<b>Special hazard.:</b>	OX

#### Potential Health Effects

<b>Inhalation</b>	May be harmful if inhaled. Causes respiratory tract irritation.
<b>Skin</b>	May be harmful if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.
<b>Ingestion</b>	May be harmful if swallowed.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Ferric nitrate nonahydrate

Formula :  $\text{FeN}_3\text{O}_9 \cdot 9\text{H}_2\text{O}$

Molecular Weight : 404.00 g/mol

Component	Concentration
<b>Ferric nitrate nonahydrate</b>	
CAS-No.	7782-61-8
EC-No.	233-899-5
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### 4. FIRST AID MEASURES

#### General advice

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

#### 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 for at least 15 minutes and consult a physician.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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### 5. FIREFIGHTING MEASURES

#### Conditions of flammability

Not flammable or combustible.

#### 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 fire fighting if necessary.

#### Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - nitrogen oxides (NO<sub>x</sub>), Sulphur oxides, Borane/boron oxides, Iron oxides

#### Further information

Use water spray to cool unopened containers.

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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. Evacuate personnel to safe areas. Avoid breathing dust.

### Environmental precautions

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 (see section 13). Keep in suitable, closed containers for disposal.

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## 7. HANDLING AND STORAGE

### Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Keep away from heat and sources of ignition.

### Conditions for safe storage

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

Hygroscopic. Air sensitive. Store under inert gas.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Ferric nitrate nonahydrate	7782-61-8	TWA	1 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Upper Respiratory Tract & skin irritation varies			
		TWA	1 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	1 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator 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 protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin and body protection

impervious 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                      solid

Colour no data available

#### Safety data

pH no data available

Melting point/freezing point Melting point/range: 47 °C (117 °F) - lit.

Boiling point no data available

Flash point not applicable

Ignition temperature no data available

Autoignition temperature no data available

Lower explosion limit no data available

Upper explosion limit no data available

Vapour pressure no data available

Density 1.68 g/cm<sup>3</sup> at 20 °C (68 °F)

Water solubility soluble

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

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

no data available

### Conditions to avoid

no data available

### Materials to avoid

Organic materials, Powdered metals

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - nitrogen oxides (NO<sub>x</sub>), Sulphur oxides, Borane/boron oxides, Iron oxides

Other decomposition products - no data available

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

LD50 Oral - rat - 3,250 mg/kg

#### Inhalation LC50

#### 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: 2A - Group 2A: Probably carcinogenic to humans (Ferric nitrate nonahydrate)

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.

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.

**Reproductive toxicity**

no data available

**Teratogenicity**

no data available

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

Inhalation - May cause respiratory irritation.

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

no data available

**Aspiration hazard**

no data available

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. Causes respiratory tract irritation.
<b>Ingestion</b>	May be harmful if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.

**Signs and Symptoms of Exposure**

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer., Nausea, Dizziness, Headache, Weakness, Incoordination., Confusion., Cyanosis, Coma

**Synergistic effects**

no data available

**Additional Information**

RTECS: NO7175000

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**12. ECOLOGICAL INFORMATION**

**Toxicity**

**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**

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

**Contaminated packaging**

Dispose of as unused product.

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### 14. TRANSPORT INFORMATION

**DOT (US)**

UN number: 1466 Class: 5.1 Packing group: III  
Proper shipping name: Ferric nitrate  
Reportable Quantity (RQ): 1000 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN number: 1466 Class: 5.1 Packing group: III EMS-No: F-A, S-Q  
Proper shipping name: FERRIC NITRATE  
Marine pollutant: No

**IATA**

UN number: 1466 Class: 5.1 Packing group: III  
Proper shipping name: Ferric nitrate

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### 15. REGULATORY INFORMATION

**OSHA Hazards**

Oxidizer, Carcinogen, Irritant

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**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**

Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

	CAS-No.	Revision Date
Ferric nitrate nonahydrate	7782-61-8	1993-04-24

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
Ferric nitrate nonahydrate	7782-61-8	1993-04-24

**New Jersey Right To Know Components**

	CAS-No.	Revision Date
Ferric nitrate nonahydrate	7782-61-8	1993-04-24

**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. OTHER INFORMATION****Further information**

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