

Material Safety Data Sheet

sigma-aldrich.com

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1. PRODUCT AND COMPANY IDENTIFICATION

| | |
|--|---|
| Product name | Iron(III) nitrate nonahydrate |
| Product Number | 254223 |
| Brand | 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, Irritant, Carcinogen

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: 0
Flammability: 0

Physical hazards: 1

NFPA Rating

Health hazard: 2
Fire: 0
Reactivity Hazard: 1
Special hazard.: OX

Potential Health Effects

| | |
|------------|--|
| Inhalation | May be harmful if inhaled. Causes respiratory tract irritation. |
| Skin | May be harmful if absorbed through skin. Causes skin irritation. |
| Eyes | Causes eye irritation. |
| Ingestion | May be harmful if swallowed. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| | |
|------------------|---|
| Synonyms | Ferric nitrate |
| Formula | FeN ₃ O ₉ · 9H ₂ O |
| Molecular Weight | 404.00 g/mol |

| Component | Concentration |
|---|---------------|
| Ferric nitrate nonahydrate CAS-No. 7782-61-8 EC-No. 233-899-5 | |

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.

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 (NOx), Sulphur oxides, Borane/boron oxides, Iron oxides

Further information

Use water spray to cool unopened containers.

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.

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.

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 ³ | USA, ACGIH Threshold Limit Values (TLV) |
| Remarks | Upper Respiratory Tract & skin irritation varies | | | |
| | | TWA | 1 mg/m ³ | USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| | | TWA | 1 mg/m ³ | 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.

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 |
| Autogignition 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 ³ 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 |

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_x), Sulphur oxides, Borane/boron oxides, Iron oxides
Other decomposition products - no data available

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

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.

Ingestion May be harmful if swallowed.

Skin May be harmful if absorbed through skin. Causes skin irritation.

Eyes 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

12. ECOLOGICAL INFORMATION

Toxicity

Aldrich - 254223
Delivery 0841166718-000020 Purchase Order 12-3779

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

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.

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

15. REGULATORY INFORMATION

OSHA Hazards

Oxidizer, Irritant, Carcinogen

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

Ferric nitrate nonahydrate

CAS-No.
7782-61-8

Revision Date
1993-04-24

Pennsylvania Right To Know Components

Ferric nitrate nonahydrate

CAS-No.
7782-61-8

Revision Date
1993-04-24

New Jersey Right To Know Components

Ferric nitrate nonahydrate

CAS-No.
7782-61-8

Revision Date
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.

16. OTHER INFORMATION**Further information**

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