



# SAFETY DATA SHEET

## 1. Identification

**Product identifier** FERRIC NITRATE

**Other means of identification**

**Product Code** 1730

**Synonym(s)** Ferric nitrate nonahydrate (CAS #7782-61-8)

**Recommended use** Intermediate handled under strictly controlled conditions

**Recommended restrictions** None known.

### Manufacturer/Importer/Supplier/Distributor information

**Manufacturer**

**Manufacturer / Supplier:** The Shepherd Chemical Company

**Address:** 4900 Beech Street  
Norwood, Ohio 45212 USA

**Telephone:** 513-731-1110

**Fax:** 513-731-2151

**Emergency USA:** CHEMTREC: 800-424-9300

**Emergency International:** CHEMTREC: 00 1 703-527-3887

**Emergency EU** +112

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## 2. Hazard(s) identification

**Physical hazards** Oxidizing solids Category 3

**Health hazards** Skin corrosion/irritation Category 1B  
Serious eye damage/eye irritation Category 1

**Environmental hazards** Not classified.

**OSHA defined hazards** Not classified.

### Label elements



**Signal word** Danger

**Hazard statement** May intensify fire; oxidizer. Causes severe skin burns and eye damage. Causes serious eye damage.

**Precautionary statement**

**Prevention** Keep away from heat. Take any precaution to avoid mixing with combustibles. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

**Response** In case of major fire and large quantities: Evacuate area and fight fire remotely due to the risk of explosion. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Specific treatment (see this label). Wash contaminated clothing before reuse. In case of fire: Use appropriate media to extinguish.

**Storage** Store locked up. Do not store near combustible materials.

**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** Not applicable.

## 3. Composition/information on ingredients

### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Ferric Nitrate		10421-48-4	60
Waters of hydration		7732-18-5	40

## 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
<b>Ingestion</b>	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
<b>Most important symptoms/effects, acute and delayed</b>	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Not applicable. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

## 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	None known. May intensify fire; oxidizer.
<b>Special protective equipment and precautions for firefighters</b>	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
<b>Fire-fighting equipment/instructions</b>	In the event of fire, cool tanks with water spray. Move containers from fire area if you can do so without risk. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
<b>Specific methods</b>	Cool containers exposed to flames with water until well after the fire is out.
<b>General fire hazards</b>	May intensify fire; oxidizer.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Prevent entry into waterways, sewers, basements or confined areas. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Bund far ahead of liquid spill for later disposal. This product is miscible in water. Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.
<b>Environmental precautions</b>	Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Keep away from heat. Take any precaution to avoid mixing with combustibles. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	Store locked up. Keep away from heat. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS). Do not store near combustible materials.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Percent
Ferric Nitrate (10421-48-4)	TWA	1 mg/m3	

## US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Percent
Ferric Nitrate (10421-48-4)	TWA	1 mg/m3	

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Appropriate engineering controls</b>	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Wear eye/face protection. Wear safety glasses with side shields (or goggles) and a face shield.
<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves.
<b>Other</b>	Wear appropriate chemical resistant clothing.
<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

<b>Appearance</b>	crystals
<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Color</b>	Violet.
<b>Odor</b>	Slight nitric acid odor.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not applicable
<b>Melting point/freezing point</b>	116.96 °F (47.2 °C) nonahydrate
<b>Initial boiling point and boiling range</b>	Not applicable
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	0 hPa estimated
<b>Vapor density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	soluble
<b>Partition coefficient (n-octanol/water)</b>	Not applicable.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	257 °F (125 °C)
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Oxidizing properties</b>	No oxidizing properties.
<b>Percent volatile</b>	0 % estimated estimated
<b>Specific gravity</b>	1.7
<b>VOC (Weight %)</b>	0 % estimated

Loose Packing Density Not available.

## 10. Stability and reactivity

**Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.  
**Chemical stability** Material is stable under normal conditions.  
**Possibility of hazardous reactions** Hazardous polymerization does not occur.  
**Conditions to avoid** Excessive heat. Avoid temperatures exceeding the decomposition temperature. None known. Contact with incompatible materials.  
**Incompatible materials** Organic materials  
**Hazardous decomposition products** No dangerous reaction known under conditions of normal use.

## 11. Toxicological information

### Information on likely routes of exposure

**Ingestion** Causes digestive tract burns.  
**Inhalation** Prolonged inhalation may be harmful. May cause irritation to the respiratory system.  
**Skin contact** Causes severe skin burns.  
**Eye contact** Causes serious eye damage.

**Symptoms related to the physical, chemical and toxicological characteristics** Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

### Information on toxicological effects

#### Acute toxicity

Components	Species	Test Results
Ferric Nitrate (CAS 10421-48-4)		
<b>Acute</b>		
<i>Oral</i>		
LD50	Rat	3250 mg/kg

\* Estimates for product may be based on additional component data not shown.

**Skin corrosion/irritation** Causes severe skin burns and eye damage.  
**Serious eye damage/eye irritation** Causes serious eye damage.  
**Respiratory or skin sensitization**  
**Respiratory sensitization** No data available.  
**Skin sensitization** This product is not expected to cause skin sensitization.  
**Germ cell mutagenicity** Not classified.  
**Carcinogenicity** Not classified.  
**Reproductive toxicity** Not classified.  
**Specific target organ toxicity - single exposure** Not classified.  
**Specific target organ toxicity - repeated exposure** Not classified.  
**Aspiration hazard** Not classified.  
**Chronic effects** Prolonged inhalation may be harmful. Not available.

## 12. Ecological information

**Ecotoxicity** The methods for determining biodegradability are not applicable to inorganic substances.  
**Persistence and degradability** The product solely consists of inorganic compounds which are not biodegradable.  
**Bioaccumulative potential** Not applicable.  
**Mobility in soil** No data available.  
**Other adverse effects** Not established.

### 13. Disposal considerations

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

### 14. Transport information

#### DOT

<b>UN number</b>	UN1466
<b>UN proper shipping name</b>	Ferric nitrate
<b>Transport hazard class(es)</b>	
<b>Class</b>	5.1
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	5.1
<b>Packing group</b>	III
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Special provisions</b>	A1, A29, IB8, IP3, T1, TP33
<b>Packaging exceptions</b>	152
<b>Packaging non bulk</b>	213
<b>Packaging bulk</b>	240

#### DOT BULK

<b>UN number</b>	UN1466
<b>UN proper shipping name</b>	Ferric Nitrate ( RQ = 1000)
<b>Transport hazard class(es)</b>	
<b>Class</b>	5.1
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	5.1
<b>Packing group</b>	III
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

#### IATA

<b>UN number</b>	UN1466
<b>UN proper shipping name</b>	Ferric nitrate
<b>Transport hazard class(es)</b>	
<b>Class</b>	5.1
<b>Subsidiary risk</b>	-
<b>Packing group</b>	III
<b>Environmental hazards</b>	No.
<b>ERG Code</b>	5L
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Other information</b>	
<b>Passenger and cargo aircraft</b>	Forbidden.
<b>Cargo aircraft only</b>	Allowed.

#### IMDG

<b>UN number</b>	UN1466
<b>UN proper shipping name</b>	FERRIC NITRATE
<b>Transport hazard class(es)</b>	
<b>Class</b>	5.1
<b>Subsidiary risk</b>	-
<b>Packing group</b>	III
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	No.
<b>EmS</b>	F-A, S-Q
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

DOT



DOT BULK; IATA; IMDG



## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Ferric Nitrate (CAS 10421-48-4) LISTED

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - Yes  
Delayed Hazard - No  
Fire Hazard - Yes  
Pressure Hazard - No  
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance** Yes

**SARA 311/312 Hazardous chemical** Yes

**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
Water Dissociable Nitrate Compound N511		100

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

**US. Massachusetts RTK - Substance List**

Ferric Nitrate (CAS 10421-48-4)

**US. New Jersey Worker and Community Right-to-Know Act**

Not regulated.

**US. Pennsylvania RTK - Hazardous Substances**

Ferric Nitrate (CAS 10421-48-4)

**US. Rhode Island RTK**

Ferric Nitrate (CAS 10421-48-4)

**US. California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision****Issue date** 02-10-2015**Version #** 01**Disclaimer**

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