

## SAFETY DATA SHEET

Creation Date 02-November-2009

Revision Date 24-December-2021

Revision Number 12

### 1. Identification

**Product Name** Iron, reference standard solution 1000 ppm

**Cat No. :** SI124-100; SI124-500

**Synonyms** No information available

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

#### Details of the supplier of the safety data sheet

##### Company

**Importer/Distributor**  
Fisher Scientific  
112 Colonnade Road,  
Ottawa, ON K2E 7L6,  
Canada  
Tel: 1-800-234-7437

##### **Manufacturer**

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

**Emergency Telephone Number** CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. Hazard(s) identification

#### Classification

**WHMIS 2015 Classification** Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

<b>Corrosive to metals</b>	Category 1
<b>Skin Corrosion/Irritation</b>	Category 2
<b>Serious Eye Damage/Eye Irritation</b>	Category 1

#### Label Elements

**Signal Word**  
Danger

**Hazard Statements**  
May be corrosive to metals  
Causes skin irritation  
Causes serious eye damage

**Precautionary Statements****Prevention**

Keep only in original container

Wash face, hands and any exposed skin thoroughly after handling

Wear protective gloves/protective clothing/eye protection/face protection

**Response**

IF ON SKIN: Wash with plenty of soap and water

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

Take off contaminated clothing

Absorb spillage to prevent material damage

**Storage**

Store in corrosive resistant polypropylene container with a resistant inliner

**Disposal**

Dispose of contents/container to an approved waste disposal plant

### 3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Water	7732-18-5	> 94
Nitric acid	7697-37-2	< 5
Ferric nitrate nonahydrate	7782-61-8	< 1

### 4. First-aid measures

<b>General Advice</b>	If symptoms persist, call a physician.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water.
<b>Most important symptoms/effects Notes to Physician</b>	Causes eye burns. Causes severe eye damage. Treat symptomatically

### 5. Fire-fighting measures

<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	Not applicable
<b>Method -</b>	No information available

<b>Autoignition Temperature</b>	No information available
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

**Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes.

**Hazardous Combustion Products**

Nitrogen oxides (NO<sub>x</sub>). Thermal decomposition can lead to release of irritating gases and vapors.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

<b>Health</b>	<b>Flammability</b>	<b>Instability</b>	<b>Physical hazards</b>
3	0	0	N/A

**6. Accidental release measures**

**Personal Precautions** Use personal protective equipment as required. Ensure adequate ventilation.

**Environmental Precautions** Should not be released into the environment. See Section 12 for additional Ecological Information.

**Methods for Containment and Clean Up** Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

**7. Handling and storage**

**Handling** Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

**Storage.** Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store in metal containers. Corrosives area. Keep in properly labeled containers. Incompatible Materials. Strong oxidizing agents. Strong bases. Metals.

**8. Exposure controls / personal protection****Exposure Guidelines**

Component	Alberta	British Columbia	Ontario TWA/EV	Quebec	ACGIH TLV	OSHA PEL	NIOSH IDLH
Nitric acid	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>	TWA: 2 ppm STEL: 4 ppm	(Vacated) TWA: 2 ppm (Vacated) TWA: 5 mg/m <sup>3</sup> (Vacated) STEL: 4 ppm (Vacated) STEL: 10 mg/m <sup>3</sup> TWA: 2 ppm TWA: 5 mg/m <sup>3</sup>	IDLH: 25 ppm TWA: 2 ppm TWA: 5 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>
Ferric nitrate nonahydrate	TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>	TWA: 1.0 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>	(Vacated) TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>

**Legend**

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

**Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

**Personal protective equipment****Eye Protection**

Goggles

**Hand Protection**

Wear appropriate protective gloves and clothing to prevent skin exposure.

Glove material	Breakthrough time	Glove thickness	Glove comments
Natural rubber	See manufacturers	-	Splash protection only
Nitrile rubber	recommendations		
Neoprene			
PVC			

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

**Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Recommended Filter type:** Particulates filter conforming to EN 143

When RPE is used a face piece Fit Test should be conducted

**Environmental exposure controls**

No information available.

**Hygiene Measures**

Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wear suitable gloves and eye/face protection.

## 9. Physical and chemical properties

<b>Physical State</b>	Liquid
<b>Appearance</b>	Clear
<b>Odor</b>	Odorless
<b>Odor Threshold</b>	No information available
<b>pH</b>	< 1
<b>Melting Point/Range</b>	> 0 °C / 32 °F
<b>Boiling Point/Range</b>	< 100 °C / 212 °F
<b>Flash Point</b>	Not applicable
<b>Evaporation Rate</b>	> 1 (Ether = 1.0)
<b>Flammability (solid,gas)</b>	Not applicable
<b>Flammability or explosive limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Vapor Pressure</b>	14 mmHg
<b>Vapor Density</b>	No information available
<b>Specific Gravity</b>	~ 1.0
<b>Solubility</b>	Soluble in water

Partition coefficient; n-octanol/water  
 Autoignition Temperature  
 Decomposition Temperature  
 Viscosity

No data available  
 No information available  
 No information available  
 No information available

## 10. Stability and reactivity

<b>Reactive Hazard</b>	None known, based on information available
<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Incompatible products. Excess heat. Exposure to air or moisture over prolonged periods.
<b>Incompatible Materials</b>	Strong oxidizing agents, Strong bases, Metals
<b>Hazardous Decomposition Products</b>	Nitrogen oxides (NOx), Thermal decomposition can lead to release of irritating gases and vapors
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.

## 11. Toxicological information

### Acute Toxicity

#### Product Information

##### Oral LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

##### Dermal LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

##### Vapor LC50

Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	-	-
Nitric acid	Not listed	Not listed	LC50 = 2500 ppm. (Rat) 1h
Ferric nitrate nonahydrate	LD50 = 3250 mg/kg ( Rat )	Not listed	Not listed

**Toxicologically Synergistic** No information available

#### Products

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** Severe eye irritant. Irritating to skin.

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Nitric acid	7697-37-2	Not listed	Not listed	Not listed	Not listed	Not listed
Ferric nitrate nonahydrate	7782-61-8	Not listed	Not listed	Not listed	Not listed	Not listed

IARC (International Agency for Research on Cancer)

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

<b>Teratogenicity</b>	No information available.
<b>STOT - single exposure</b>	None known
<b>STOT - repeated exposure</b>	None known
<b>Aspiration hazard</b>	No information available
<b>Symptoms / effects, both acute and delayed</b>	No information available
<b>Endocrine Disruptor Information</b>	No information available
<b>Other Adverse Effects</b>	The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

Do not empty into drains. .

<b>Persistence and Degradability</b>	Miscible with water Persistence is unlikely based on information available.
<b>Bioaccumulation/ Accumulation</b>	No information available.
<b>Mobility</b>	. Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Nitric acid	-2.3

## 13. Disposal considerations

<b>Waste Disposal Methods</b>	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.
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## 14. Transport information

### DOT

<b>UN-No</b>	UN3264
<b>Proper Shipping Name</b>	Corrosive liquid, acidic, inorganic, n.o.s.
<b>Technical Name</b>	(NITRIC ACID)
<b>Hazard Class</b>	8
<b>Packing Group</b>	III

### TDG

<b>UN-No</b>	UN3264
<b>Proper Shipping Name</b>	Corrosive liquid, acidic, inorganic, n.o.s.
<b>Hazard Class</b>	8
<b>Packing Group</b>	III

### IATA

<b>UN-No</b>	UN3264
<b>Proper Shipping Name</b>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.*
<b>Hazard Class</b>	8
<b>Packing Group</b>	III

### IMDG/IMO

<b>UN-No</b>	UN3264
<b>Proper Shipping Name</b>	Corrosive liquid, acidic, inorganic, n.o.s.
<b>Hazard Class</b>	8
<b>Packing Group</b>	III

## 15. Regulatory information

### International Inventories

Component	CAS-No	DSL	NDSL	TSCA	TSCA Inventory notification - Active-Inactive	EINECS	ELINCS	NLP
Water	7732-18-5	X	-	X	ACTIVE	231-791-2	-	-
Nitric acid	7697-37-2	X	-	X	ACTIVE	231-714-2	-	-
Ferric nitrate nonahydrate	7782-61-8	-	-	-	-	-	-	-

Component	CAS-No	IECSC	KECL	ENCS	ISHL	TCSI	AICS	NZIoC	PICCS
Water	7732-18-5	X	KE-35400	X	-	X	X	X	X
Nitric acid	7697-37-2	X	KE-25911	X	X	X	X	X	X
Ferric nitrate nonahydrate	7782-61-8	X	-	X	-	X	X	X	X

**Legend:**

X - Listed '-' - Not Listed

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances**IECSC** - Chinese Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**ENCS** - Japanese Existing and New Chemical Substances**AICS** - Australian Inventory of Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**Canada**

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

Component	Canada - National Pollutant Release Inventory (NPRI)	Canadian Environmental Protection Agency (CEPA) - List of Toxic Substances	Canada's Chemicals Management Plan (CEPA)
Nitric acid	Part 1, Group A Substance		

**Other International Regulations****Authorisation/Restrictions according to EU REACH**

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Nitric acid	-	Use restricted. See item 75. (see link for restriction details)	-

<https://echa.europa.eu/substances-restricted-under-reach>

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

Component	CAS-No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Water	7732-18-5	Listed	Not applicable	Not applicable	Not applicable
Nitric acid	7697-37-2	Listed	Not applicable	Not applicable	Not applicable
Ferric nitrate nonahydrate	7782-61-8	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS-No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Water	7732-18-5	Not applicable	Not applicable	Not applicable	Not applicable
Nitric acid	7697-37-2	Not applicable	Not applicable	Not applicable	Annex I - Y34
Ferric nitrate nonahydrate	7782-61-8	Not applicable	Not applicable	Not applicable	Not applicable

**16. Other information**

<b>Prepared By</b>	Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com
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<b>Print Date</b>	24-December-2021
<b>Revision Summary</b>	This document has been updated to comply with the requirements of WHMIS 2015 to align with the Globally Harmonised System (GHS) for the Classification and Labelling of Chemicals.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**