Safety Data Sheet IRON (III) NITRATE Nonahydrate

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SECTION 1: Identification

GHS Product identifier

Product name	IRON (III) NITRATE Nonahydrate

Recommended use of the chemical and restrictions on use

Mordant in dyeing, weighting silks, tanning, analytical reagent, laboratory reagent, oxidising agent and corrosion inhibitor.

Additional information: When used for laboratory chemical analysis, it has no poison schedule. If this compound is used in human or animal application then it may acquire a poison schedule of S6, S5, S4 or S2.

Supplier's details

Name	ChemSupply Australia Pty Ltd
Address	38-50 Bedford Street 5013 Gillman South Australia Australia
Telephone	08 8440 2000
email	www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Serious eye damage/eye irritation, Cat. 1
- Skin corrosion/irritation, Cat. 1B

GHS label elements, including precautionary statements

Pictograms

Signal word	**Danger**

Hazard statement(s)

H314	Causes severe skin burns and eye damage

Precautionary statement(s)

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physcian
P321	Specific treatment (see … on this label).
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 404

Components

Component	CAS no.	Concentration
Iron (III) Nitrate Nonahydrate	**7782-61-8**	**<= 100 % (weight)**
CLASSIFICATIONS: Serious eye damage/eye irritation, Cat. 1; Skin corrosion/irritation, Cat. 1B. HAZARDS: H314 - Causes severe skin burns and eye damage; H318 - Causes serious eye damage.		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain in work area.
If inhaled	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Consult a physician.
In case of skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower for at least 15 minutes. Call a poison center or doctor if irritation develops or persists. Wash contaminated clothing before reuse.

	Acute and delayed symptoms and effects: Causes severe skin burns. Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.
In case of eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.
	Acute and delayed symptoms and effects: Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.
If swallowed	Do not induce vomiting. Wash out mouth thoroughly with water. Seek immediate medical attention.

Most important symptoms/effects, acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary
For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Use water spray, dry chemical, carbon dioxide, or appropriate foam

Specific hazards arising from the chemical
May liberate toxic fumes in fire including nitrous gases, nitrogen oxides, iron oxides.

Special protective actions for fire-fighters
Wear SCBA and chemical splash suit. Structural firefighter's uniform will provide limited protection.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Evacuate the area of all non-essential personnel. Avoid inhalation, contact with skin, eyes and clothing. Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms.
Wear protective clothing specified for normal operations (see Section 8)

Methods and materials for containment and cleaning up
Sweep up and remove to a suitable, clearly labelled container for disposal in accordance with local regulations. Do not use rags, sawdust or other combustible absorbents to wipe up spilled material. Use appropriate containment to avoid environmental contamination. Prevent from entering into drains, ditches, rivers or the sea.

SECTION 7: Handling and storage

Precautions for safe handling
Avoid substance contact and generation and inhalation of dust.

Conditions for safe storage, including any incompatibilities
Store in a cool,dry place. Store in well ventilated area. Store away from combustible materials. Keep containers closed at all times.

Solutions in water are slightly corrosive to metals.

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls
Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection
Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Body protection
Footwear: Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection: Clean clothing or protective clothing should be worn, preferably with and apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance	Pale-violet crystals.
Color	No data available.
Odor	Weak of nitric acid.
Odor threshold	No data available.
Melting point/freezing point	47.2 °C (decomposes)
Boiling point or initial boiling point and boiling range	No data available.
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	~125 °C (release of crystalline water @ ~100 °C).
Oxidizing properties	Has been shown not to be oxidising in a test following Directive 67/548/EEC (Method A17, oxidising properties).
pH	~1.3 (100 g/l, H2O, 20 °C)
Kinematic viscosity	No data available.

Solubility	Solubility in Water: Soluble. Solubility in Organic Solvents: Freely soluble in alcohol and acetone. Slightly soluble in cold concentrated HNO3.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	No data available.
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 1.684
Relative vapor density	No data available.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes
No data available.

Further safety characteristics (supplemental)
No data available.

SECTION 10: Stability and reactivity

Reactivity
Stable under normal conditions of storage and handling.

Chemical stability
Hygroscopic, sensitive to moisture.

Possibility of hazardous reactions
Hazardous Polymerization: Will not occur.

Conditions to avoid
Exposure to moisture.

Avoid storing in direct sunlight and avoid extremes of temperature.

Incompatible materials
Risk of explosion with: dimethyl sulfoxide. Increased reacivity with: organic combustible substances, reducing agents, powdered metals.

Hazardous decomposition products
May liberate toxic fumes in fire including nitrous gases, nitrogen oxides, iron oxides.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Acute Toxicity - Oral: LD50 (rat): 3.25 g/kg (Smyth).

Ingestion: May cause irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract, gastrointestinal discomfort, bloody diarrhoea and vomiting. Effects of ingestion of large amounts may be delayed for several hours and can include epigastric pain, hematemesis, possible circulatory failure and collapse.

Inhalation: Inhalation of dust causes irritation to mucous membranes and respiratory tract. Symptoms include coughing and dyspnoea (shortness of breath).

Skin corrosion/irritation
Causes skin burns.

Serious eye damage/irritation
Risk of serious eye damage.

Respiratory or skin sensitization
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

Specific target organ toxicity (STOT) - single exposure
Not classified based on available information.

Specific target organ toxicity (STOT) - repeated exposure
Not classified based on available information.

Aspiration hazard
Not classified based on available information.

Additional information
Health Hazard: The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities.
The following applies to soluble iron compounds: nausea and vomiting after swallowing. The absorption of large quantities is followed by cardiovascular disorders. Toxic effect on liver and kidneys.

Chronic Effects: The continued administration of medicinal amounts may cause constipation.

SECTION 12: Ecological information

Toxicity
Environmental Protection: Do not allow to enter waters, waste water, or soil!

Acute Toxicity - Fish: LC50 (L. idus): 10 - 20 mg/l.
The following applies to dissolved iron compounds in general: fish: toxic as from 0.9 mg/l at pH 6.5 - 7.5;
lethal as from 1 mg/l at pH 5.5 - 6.7;
50 mg/l iron upper limit for fish life.
The following applies to nitrates in general: may contribute to the eutrophication of water supplies.
Hazard for drinking water.
LC50 >500 mg/l

Persistence and degradability
Methods for the determination of biodegradability are not applicable to inorganic substances.

Other adverse effects
When iron ions flocculate in an alkaline medium, mechanical damage occurs in aquatic organisms.
The following applies to nitrates in general: may contribute to the eutrophication of water supplies.

Hazard for drinking water.

SECTION 13: Disposal considerations

Disposal methods

Product disposal
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations
Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)
UN Number: 3260
Class: 8
Packing Group: II
Proper Shipping Name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (IRON (III) NITRATE, NONAHYDRATE)

Hazchem emergency action code (EAC)
2X

IMDG
UN Number: 3260
Class: 8
Packing Group: II
Proper Shipping Name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (IRON (III) NITRATE, NONAHYDRATE)

IATA
UN Number: 3260
Class: 8
Packing Group: II
Proper Shipping Name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (IRON (III) NITRATE, NONAHYDRATE)

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP
Poison Schedule: NS

SECTION 16: Other information

Further information/disclaimer
ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'
Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.
Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.
Safe Work Australia, Workplace Exposure Standards for Airbourne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)