



SAFETY DATA SHEET FERRIC AMMONIUM CITRATE REVISION 4, DATE 04 OCT 21

1. IDENTIFICATION

Product Name	Ferric Ammonium Citrate
Other Names	Ammonium ferric citrate; Ammonium iron(III) citrate; Citric acid, ammonium iron salt, green
Uses	Food additive, Acidity regulator; Water purification; Reducing agent; Medical imaging.
Chemical Family	No Data Available
Chemical Formula	C ₆ H ₈ O ₇ .xFe.xH ₃ N
Chemical Name	1,2,3-Propanetricarboxylic acid, 2-hydroxy-, ammonium iron(3+) salt
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)

Not Scheduled



Globally Harmonised System

Hazard Classification	NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Signal Word	None

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Health Hazards 6.4A	Substances that are irritating to the eye
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Ferric ammonium citrate	C ₆ H ₈ O ₇ .xFe.xH ₃ N	1185-57-5	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth, then drink water (two glasses at most). Loosen tight clothing, such as collar, tie, belt or waist-band. Do NOT induce vomiting unless directed to do so by medical personnel. Get immediate medical advice/attention if large quantities of this material are swallowed or if you feel unwell. Never give anything by mouth to an unconscious person.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.
Skin	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Loosen tight clothing, such as collar, tie, belt or waist-band. If respiratory symptoms persist, get medical advice/attention. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
Advice to Doctor	Treat symptomatically.
Medical Conditions Aggravated by Exposure	No information available.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
Flammability Conditions	May be combustible at high temperatures.
Extinguishing Media	Use dry chemical, Carbon dioxide (CO ₂), foam or water spray for extinction - Do not use water jets. *Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire and Explosion Hazard	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Containers may explode when heated. Ambient fire may liberate hazardous vapours.
Hazardous Products of Combustion	Development of hazardous combustion gases or vapours possible in the event of fire, including Carbon oxides, Nitrogen oxides (NO _x), Iron oxides, Ammonia.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. ELIMINATE all ignition sources (if dust clouds can occur). Do not touch or walk through spilled material. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	With clean shovel, place material into clean, dry containers and cover loosely; move containers from spill area (see SECTION 13).
Containment	Stop leak if safe to do so. Prevent dust cloud. Cover powder spill with plastic sheet or tarp to minimise spreading.
Decontamination	Finish cleaning by spreading water on the contaminated surface and dispose of according to local authority requirements.
Environmental Precautionary Measures	Prevent entry into drains and waterways.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Use personal protective equipment as required (see SECTION 8). *In case of a large spill, a self-contained breathing apparatus should be used to avoid inhalation of the product.

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid formation of dust or aerosols. Avoid breathing dust or aerosols and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Protect from moisture (hygroscopic). Keep away from heat and sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10).
Container	Store in light-resistant containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product. For Iron salts, soluble (as Fe): - Safe Work Australia Exposure Standard: TWA = 1 mg/m3. - New Zealand Workplace Exposure Standard: TWA = 1 mg/m3.
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Protection Equipment	- Respiratory protection: Not required; except in case of dust or aerosol formation. Recommended: Dust/particulate respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses or splash goggles. - Hand protection: Handle with gloves. Recommended: Protective gloves. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Lab coat; Full suit, Boots.
Special Hazards Precautions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Take off contaminated clothing and wash it before storage or reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Powder
Odour	Odourless
Colour	Brownish, yellowish
pH	No Data Available
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	No Data Available
Freezing Point	No Data Available
Solubility	Soluble in water - Practically insoluble in alcohol
Specific Gravity	1.8 (Water = 1)
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available

Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	May be combustible at high temperatures.
Reactions That Release Gases or Vapours	Development of hazardous combustion gases or vapours possible in the event of fire, including Carbon oxides, Nitrogen oxides (NOx), Iron oxides, Ammonia.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	No information available.
Chemical Stability	Stable under recommended storage conditions.
Conditions to Avoid	Avoid exposure to light. Keep away from heat and sources of ignition.
Materials to Avoid	Incompatible/reactive with oxidising agents, iodides, Acacia preparations and tannins.
Hazardous Decomposition Products	Development of hazardous combustion gases or vapours possible in the event of fire, including Carbon oxides, Nitrogen oxides (NOx), Iron oxides, Ammonia.
Hazardous Polymerisation	Will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	<ul style="list-style-type: none">- Acute toxicity: Ingestion can produce gastrointestinal tract irritation with hypomotility, diarrhoea.- Skin corrosion/irritation: Causes mild skin irritation. Skin contact may cause irritation or rash, particularly with moist skin. Prolonged skin contact may cause irritation. No skin irritation (Rabbit, 4h) [ECHA].- Eye damage/irritation: May cause eye irritation. Eye contact may cause irritation with redness, tearing and abrasion. No eye irritation (Rabbit) [ECHA].- Respiratory/skin sensitisation: No information available.- Germ cell mutagenicity: Negative, Ames test [OECD TG 471 (ECHA)]. Negative, Chromosome aberration test in vitro [OECD TG 473 (ECHA)].- Carcinogenicity: No information available.- Reproductive toxicity: No information available.- STOT (single exposure): Inhalation of high concentrations of dust may cause nasal, throat or lung irritation. Symptoms may include coughing and wheezing.- STOT (repeated exposure): Prolonged eye contact may cause a brownish discolouration of the eyes.- Aspiration toxicity: No information available.
Acute	
Ingestion	Acute toxicity (Oral): - LD50, Rat: >2,000 mg/kg
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Likely to be not toxic to aquatic microorganisms at environmentally relevant concentrations [ECHA].
Persistence/Degradability	Readily biodegradable in water [ECHA].
Mobility	No information available.
Environmental Fate	Prevent entry into drains and waterways.
Bioaccumulation Potential	Low potential for bioaccumulation based on log Kow = 3 [ECHA].
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Waste material must be disposed of in accordance with local/regional/national regulation.
Special Precautions for Land Fill	Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

14. TRANSPORT INFORMATION**Land Transport (Australia)**

ADG Code

Proper Shipping Name	Ferric Ammonium Citrate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	Ferric Ammonium Citrate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	Ferric Ammonium Citrate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)

US DOT

Proper Shipping Name	Ferric Ammonium Citrate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport

IMDG Code

Proper Shipping Name	Ferric Ammonium Citrate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport

IATA DGR

Proper Shipping Name	Ferric Ammonium Citrate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification

NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION**General Information**

No Data Available

Poisons Schedule (Aust)

Not Scheduled

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval CodeHSR002503
HSR004018 (Revoked)**National/Regional Inventories****Australia (AIIIC)**

Listed

Canada (DSL)

Not Determined

Canada (NDSL)

Not Determined

China (IECSC)

Not Determined

Europe (EINECS)

214-686-6

Europe (REACH)

Not Determined

Japan (ENCS/METI)

Not Determined

Korea (KECI)

Not Determined

Malaysia (EHS Register)

Not Determined

New Zealand (NZIoC)

Listed

Philippines (PICCS)

Not Determined

Switzerland (Giftliste 1)

Not Determined

Switzerland (Inventory of Notified Substances)

Not Determined

Taiwan (NCSR)

Not Determined

USA (TSCA)

Not Determined

16. OTHER INFORMATION

SAFETY DATA SHEET FERRIC AMMONIUM CITRATE REVISION 4, DATE 04 OCT 21

Related Product Codes	FEAMCI1000, FEAMCI1001, FEAMCI1002, FEAMCI1003, FEAMCI1200, FEAMCI1500, FEAMCI2000, FEAMCI2005, FEAMCI2500, FEAMCI2501, FEAMCI3000, FEAMCI3001, FEAMCI3500, FEAMCI4000
Revision	4
Revision Date	04 Oct 2021
Key/Legend	<p>< Less Than</p> <p>> Greater Than</p> <p>AICS Australian Inventory of Chemical Substances</p> <p>atm Atmosphere</p> <p>CAS Chemical Abstracts Service (Registry Number)</p> <p>cm² Square Centimetres</p> <p>CO₂ Carbon Dioxide</p> <p>COD Chemical Oxygen Demand</p> <p>deg C (°C) Degrees Celcius</p> <p>EPA (New Zealand) Environmental Protection Authority of New Zealand</p> <p>deg F (°F) Degrees Farenheit</p> <p>g Grams</p> <p>g/cm³ Grams per Cubic Centimetre</p> <p>g/l Grams per Litre</p> <p>HSNO Hazardous Substance and New Organism</p> <p>IDLH Immediately Dangerous to Life and Health</p> <p>immiscible Liquids are insoluable in each other.</p> <p>inHg Inch of Mercury</p> <p>inH₂O Inch of Water</p> <p>K Kelvin</p> <p>kg Kilogram</p> <p>kg/m³ Kilograms per Cubic Metre</p> <p>lb Pound</p> <p>LC₅₀ LC stands for lethal concentration. LC₅₀ is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.</p> <p>LD₅₀ LD stands for Lethal Dose. LD₅₀ is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.</p> <p>ltr or L Litre</p> <p>m³ Cubic Metre</p> <p>mbar Millibar</p> <p>mg Milligram</p> <p>mg/24H Milligrams per 24 Hours</p> <p>mg/kg Milligrams per Kilogram</p> <p>mg/m³ Milligrams per Cubic Metre</p> <p>Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.</p> <p>mm Millimetre</p> <p>mmH₂O Millimetres of Water</p> <p>mPa.s Millipascals per Second</p> <p>N/A Not Applicable</p> <p>NIOSH National Institute for Occupational Safety and Health</p> <p>NOHSC National Occupational Heath and Safety Commission</p> <p>OECD Organisation for Economic Co-operation and Development</p> <p>Oz Ounce</p> <p>PEL Permissible Exposure Limit</p> <p>Pa Pascal</p> <p>ppb Parts per Billion</p> <p>ppm Parts per Million</p> <p>ppm/2h Parts per Million per 2 Hours</p> <p>ppm/6h Parts per Million per 6 Hours</p> <p>psi Pounds per Square Inch</p> <p>R Rankine</p> <p>RCP Reciprocal Calculation Procedure</p> <p>STEL Short Term Exposure Limit</p> <p>TLV Threshold Limit Value</p> <p>tne Tonne</p> <p>TWA Time Weighted Average</p> <p>ug/24H Micrograms per 24 Hours</p> <p>UN United Nations</p> <p>wt Weight</p>

