

SAFETY DATA SHEET

PRODUCT NAME: FERRIC CHLORIDE 42% SOLUTION

Issue Date: May 23

IDENTIFICATION

Product Name: Ferric Chloride 42% Solution
Other Names: Ferric Perchloride, Ferric Trichloride, Iron Chloride (FeCl₃)
Product Code: CFCHLO1, CFCHLO5, ZFCHLO
Uses: Coagulant for water and waste water treatment.
Supplier: HamChem Hamilton Chemicals Ltd, 75 Ruffell Rd, Hamilton
Phone: 079744971 Web: www.hamchem.co.nz Email: info@hamchem.nz

- In emergency dial 111, and then ask for Fire, Ambulance or Police as necessary.
- In case of poisoning phone National Poisons Centre – 0800 764 766

HAZARD IDENTIFICATION



GHS Classifications

Corrosive to Metals – Category 1
Acute Toxicity (Oral) - Category 4
Skin Corrosion – Category 1C
Serious Eye Damage – Category 1
Hazardous to the Aquatic Environment (Chronic) – Category 3

Signal Word: Danger

Hazard Statements

H290 - May be corrosive to metals.
H302 - Harmful if swallowed.
H314 – Causes severe skin burns and eye damage
H318 - Causes serious eye damage.
H412 – Harmful to aquatic life with long-lasting effects

Prevention

P234 – Keep only in original packaging
P264 - Wash hands and any exposed skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P260 – Do not breathe dusts or mists
P280 – Wear protective gloves/protective clothing/eye protection/face protection
P273 – Avoid release to the environment

Response

P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTRE or Doctor.
P303+P363+P353 – IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water (or shower)
P363 – Wash contaminated clothing before reuse
P304+P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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P310 – Immediately call a POISON CENTRE/Doctor

P305+P351+P338+P310 - 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 CENTRE or Doctor.

P390 - Absorb spillage to prevent material damage.

Storage

P406 – Store in a corrosion resistant container with a resistant inner liner

Disposal

P501 - Dispose of contents/container in accordance with local/regional/national regulations

COMPOSITION & INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportion (%)
Ferric Chloride	7705-08-0	30.0-60.0%
Water	7732-18-5	Balance to 100%

FIRST AID MEASURES

Swallowed: Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water to drink. Never give anything by mouth to an unconscious patient. If vomiting occurs give further water. Seek medical advice.

Inhaled: Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist.

Eye: Immediately irrigate with copious quantities of water for 15 minutes. Eyelids to be held open. Remove clothing if contaminated, and wash skin. Urgently seek medical assistance. Transport to hospital or medical centre.

Skin: If skin or hair contact occurs, immediately remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by the Poisons information Centre or a doctor, or for 15 minutes and transport to doctor or hospital.

Medical Conditions Aggravated by Exposure: No information available on medical conditions which are aggravated from exposure to this product.

Advice to Doctor: Treat symptomatically. Can cause corneal burns.

FIRE FIGHTING MEASURES

General Measures: If safe to do so, remove containers from the path of fire.

Flammability Conditions: Product is a non-flammable liquid.

Extinguishing Media: In case of fire, use appropriate extinguishing media most suitable for surrounding fire conditions.

Fire and Explosion Hazard: Non-combustible liquid. Not considered to be a fire hazard or an explosion hazard.

Hazardous Products of Combustion: Non-combustible liquid. Incompatible with oxidizing agents, alkalis, metals, and sources of ignition. When involved in a fire, this product may emit sulphur oxides, and Hydrogen Chloride gases.

Special Fire Fighting Instructions: Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT allow firefighting water to reach waterways, drains or sewers. Store firefighting water for treatment.

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Personal Protective Equipment: Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves). Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas where gases or fumes can accumulate. Eliminate ignition sources.

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: 2X

ACCIDENTAL RELEASE MEASURES

General Response Procedure: Avoid accidents, clean up immediately. May be slippery when spilt. Eliminate all sources of ignition. Increase ventilation. Isolate the danger area. Use clean, non-sparking tools and equipment. Shut off all possible sources of ignition.

Clean Up Procedures: Small spills: Wear protective equipment to prevent skin and eye contamination. Avoid inhalation of vapours. Wipe up with absorbent (clean rag or paper towel). Allow absorbent to dry before disposing with normal household garbage.

Large spills: Slippery when split. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination. Avoid inhalation of vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal.

Containment: Stop leak if safe to do so.

Environmental Precautionary Measures: Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Authority.

Evacuation Criteria: Evacuate all unnecessary personnel.

Personal Precautionary Measures: Personnel involved in the clean-up should wear full protective clothing as listed in Exposure Controls & Personal Protection section.

HANDLING & STORAGE

Handling: Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale vapours.

Storage: Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in Stability & Reactivity section of this SDS. Protect from sunlight, moisture, and static discharges. Containers should be of acid resistant material. Stable in storage for approximately 1 year.

Container: Container type/packaging must comply with all applicable local legislation. Store in original packaging as approved by manufacturer. Do NOT use carbon steel. Containers should be of acid resistant material.

EXPOSURE CONTROLS & PERSONAL PROTECTION

Workplace Exposure Standards: No value assigned for this specific material by Worksafe NZ. However, Workplace Exposure Standard(s) for constituents:

Iron Salts, Soluble, as Fe: WES-TWA 1mg/m³ (Worksafe NZ, WES Values, April 2022)

Exposure Limits: No Data Available

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Biological Limits: No information available on biological limit values for this product.

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:

RESPIRATOR: Wear an approved respirator where dusts/vapours are generated and engineering controls are inadequate (AS1715/1716).

EYES: Tightly fitting splash goggles (AS1336/1337).

HANDS: Wear chemical resistant gloves (AS2161).

CLOTHING: Corrosion-resistant coveralls and safety footwear (AS3765/2210).

Work Hygienic Practices: No Data Available

PHYSICAL & CHEMICAL PROPERTIES

Physical State	Liquid
Odour	Acidic
Colour	Dark Red
pH	<2
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	105 - 110 °C
Freezing Point	See Additional Info °C
Specific Gravity	1.45
Flash Point	No Data Available
Melting Point	See Additional Info
Appearance	Liquid
Solubility	Miscible with water

STABILITY & REACTIVITY

General Information: Reacts with alkalis. Highly corrosive to most metals liberating (flammable) hydrogen gas. Hydrogen chloride is produced on hydrolysis (including atmospheric moisture).

Chemical Stability: This material is thermally stable when stored and used as directed.

Conditions to Avoid: Avoid contact with metals, excessive heat, and exposure to light, moisture, static discharges and high temperatures.

Materials to Avoid: Incompatible with alkalis, oxidising agents, metals.

Hazardous Decomposition Products: Hydrogen chloride

Hazardous Polymerisation: No Data Available

TOXICOLOGICAL INFORMATION

General Information: No toxicity data for this specific product, however toxicity data for a hazardous ingredient is listed below.

TOXICITY DATA FOR FERRIC CHLORIDE:

Oral LD50 (rat) 316 mg/kg

Oral LD50 (mouse) 200 mg/kg

Eye Irritant: Highly corrosive to eyes and may injure the cornea. Causes severe burns. May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur. Vapour may cause eye irritation experienced as mild discomfort and redness.

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Ingestion: Harmful by ingestion. Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract. Causes severe burns. Swallowing may result in gastro-intestinal irritation and ulceration. May also result in burns of the mouth and throat. Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Inhalation: Material may be an irritant to mucous membranes and respiratory tract.

Skin Irritant: Highly corrosive to skin - Causes severe burns. Brief contact may cause skin burns. May not produce an immediate burning sensation upon contact, delaying the awareness that contact has occurred. Symptoms may include redness, burning, and swelling of skin, burns, and other skin damage.

Carcinogen Category: No Data Available

ECOLOGICAL INFORMATION

Ecotoxicity: This product is an inorganic substance/preparation. Striped bass (fingerling) LC50/24hr: 6mg/L (static) Striped bass (Larvae) LC50/24hr : 4mg/L (static) During hydrolysis, a metal hydroxide precipitate is formed, in the pH range of 5 - 7. Due to this reaction, pH water phase is decreased. If phosphates are present, a metal phosphate complex may form.

Persistence/Degradability: No information available on persistence/degradability for this product.

Mobility Completely: Soluble in water.

Environmental Fate: Do NOT let product reach waterways, drains and sewers.

Bioaccumulation Potential: No information available on bioaccumulation for this product.

Environmental Impact: No Data Available

DISPOSAL CONSIDERATIONS

General Information: Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.

Special Precautions for Land Fill: Contact a specialist disposal company or the local waste regulator for advice. Incinerate at an approved site following all local regulations. This material may be suitable for approved landfill.

TRANSPORT INFORMATION

Proper Shipping Name	FERRIC CHLORIDE SOLUTION
Class	8 - Corrosive
Subsidiary Risk(s)	NIL
UN Number	2582
Hazchem	2X
Pack Group	III

REGULATORY INFORMATION

HSNO Classifications: 8.1A, 6.1D, 8.2C, 8.3A, 9.1C

EPA Approval Number: HSR002491 – Additives, Process Chemicals & Raw Materials (Corrosive) Group Standard 2020

OTHER INFORMATION

End of SDS.

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