

## MATERIAL SAFETY DATA SHEET

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Hazardous according to criteria of Worksafe Australia  
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Date of Issue: Aug 2002  
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### 1. IDENTIFICATION

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#### General

Product Name: FERRIC CHLORIDE ANHYDROUS

Other Names: FERRIC TRICHLORIDE ; FERRIC PERCHLORIDE IRON  
TRICHLORIDE ; IRON PERCHLORIDE ; IRON (III) CHLORIDE

UN No.: 1773

Dangerous Goods Class: 8

Subsidiary Risk: None Allocated

Hazchem Code: 2X

Pack Group: III

EPG: 40

Poisons Schedule: N/A

#### Uses:

Treatment of sewage and industrial wastes; etching agent for engraving, photography, and printed circuitry; condensation catalyst in Friedel-Crafts reactions; mordant; oxidising, chlorinating, and condensing agent; disinfectant; pigment; feed additive; water purification.

#### 1.1 Physical Description / Properties

Appearance: Brown-black powder, lumps or crystals. Very hygroscopic.

Formula:  $\text{FeCl}_3$

Boiling Point: 316 deg C

Melting Point: 300 deg C

Vapour Pressure: N/A



Specific Gravity: 2.898 (water = 1)

Flash Point: N/A

pH: 2.0 (0.1M aq soln)

Solubility in water: 920 g/l (25 deg C)

Flammability Limits (as percentage volume in air)

Lower Explosion Limit: N/A

Upper Explosion Limit: N/A

### 1.2 Other Properties

Soluble in acetone, diethyl ether, ethanol. Insoluble in ethyl acetate. Volatilises at 316 deg C.

### 1.3 Ingredients

Chemical Entity	CAS No.	Proportions (%)
FERRIC CHLORIDE, ANHYDROUS	[ 7705-08-0]	> 96
FERROUS CHLORIDE	[ 7758-94-3]	< 3
IMPURITIES	< 1	

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## 2. HEALTH HAZARD INFORMATION

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### 2.1 Health Effects - Acute

#### *Swallowed*

May cause irritation of the digestive tract. May cause liver and kidney damage. Causes severe pain, nausea, vomiting, diarrhea, and shock. May cause severe irritation of the mouth and throat. May cause low blood pressure, rapid heartbeat, skin discolouration, and possible coma.

#### *Eye*

May cause eye burns. Contact produces irritation, tearing and burning pain.

#### *Skin*

May be absorbed through the skin. May cause severe skin irritation with possible burns, especially if skin is wet or moist.

### *Inhaled*

Dust is irritating to the respiratory tract.

### 2.2 Health Effects - Chronic

Prolonged or repeated exposure may cause adverse reproductive effects. Repeated exposure may cause an increased body load of iron, with possible chronic systemic effects. Target organs : kidneys, liver, cardiovascular system.

### 2.3 First Aid

#### *Swallowed*

If swallowed, rinse mouth thoroughly with water and seek medical attention immediately. Contact a doctor or Poisons Information Centre.

#### *Eye*

If in eyes, hold eyes open and flood with water for at least 15 minutes. Seek medical attention.

#### *Skin*

If skin contact occurs, remove contaminated clothing and wash skin thoroughly with water. If irritation occurs seek medical attention.

### *Inhaled*

Remove victim to fresh air. If irritation or difficulty in breathing occurs seek medical attention.

### 2.4 First Aid Facilities

Ensure an eye bath and safety shower are available and ready for use.

### 2.5 Advice to Doctor

Treat symptomatically based on judgement of doctor and individual reactions of patient.

### 2.6 Toxicity Data

Oral LD50 = 1872 mg/kg (Rat) Dermal LD50 = not available Inhalation LC50 = not available Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP or OSHA.

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### 3. PRECAUTIONS FOR USE

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#### 3.1 Exposure Standards

TLV-TWA = 1 mg/m<sup>3</sup> as iron

#### 3.2 Engineering Controls

Ensure adequate ventilation to maintain levels below exposure standard.

#### 3.3 Personal Protection

Respiratory - always use a NIOSH-approved respirator when handling material. Eyes - wear appropriate protective eyeglasses or chemical safety goggles. Skin - wear appropriate protective gloves to prevent skin exposure. Clothing - wear appropriate protective clothing to prevent skin exposure. Always wash hands and face thoroughly after handling and before work breaks, eating, drinking, smoking or using the toilet.

#### 3.4 Flammability

Non-combustible

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### SAFE HANDLING INFORMATION

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#### 4.1 Storage / Transport

Store in a cool dry place away from direct sunlight and other sources of heat. Store in accordance with all Commonwealth, State or Territory regulations relevant to Class 8 substances. Transport in accordance with the Australian Dangerous Goods Code. Keep containers tightly sealed.

#### 4.2 Packaging / Labelling

UN No. 1773

Class 8

Sub Risk None Allocated

Hazchem Code 2X

Pack Group III

EPG No. 40



Shipping Name FERRIC CHLORIDE ANHYDROUS

Hazard HARMFUL

Risk Phrases

R22 Harmful if swallowed.

R38 Irritating to skin.

R41 Risk of serious damage to eyes.

Safety Phrases

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

#### 4.3 Spills and Disposal

##### *Spills*

Avoid raising dust. Clean up personnel should wear full protective clothing including breathing apparatus.

Mop up spills with copious quantities of water. Hold residues and washings for disposal.

##### *Disposal*

Dispose of in accordance with Local, State and Federal regulations at an approved waste disposal site.

#### 4.4 FIRE AND EXPLOSION HAZARD

Fire / Explosion

Incompatible with foodstuffs and foodstuff empties, alkalis, silver salts, moisture, sulphuric acid, allyl chloride, epichlorohydrin, metals, strong oxidising agents, sodium and potassium. Stable under normal conditions of use. Reacts with water to form toxic fumes. Hazardous decomposition products include hydrogen chloride and chlorine. Hazardous polymerisation has not been reported.

Extinguishing Media

Use water fog or fine water spray type extinguishers. Use media appropriate to surrounding fire conditions.

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## 5 OTHER INFORMATION

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### Other Information

Ecotoxicity : Stickleback (fresh water) 1.2ppm/144h (Harmful) 1.0ppm/240h  
(Safe) Daphnia (fresh water) TLm = 15ppm/96h

#### 5.1 Contact Points

Organisation	Location	Telephone	Ask For
Redox Chemicals Pty Ltd	Wetherill Park NSW	02-97255155	Technical Officer
Poisons Information Centre	Westmead	131129	
1800-251525			