



## MSDS FOR FERRIC CHLORIDE

REF: EIS/RMC/MSDS/003-0

### 1. IDENTIFICATION OF CHEMICAL PRODUCT AND SUPPLIER

**PRODUCT IDENTIFICATION:****Product Names:**

FERRIC CHLORIDE LIQUID 42%

**Product/ Part No**

ENVKEM-603

CAS NUMBER : 7705 – 08 - 0

**Recommended Use** : General chemical. Coagulant for water and waste water treatment.  
**Formula** :  $\text{FeCl}_3$ **Suppliers Details** : ENVKEM INDUSTRIAL SOLUTIONS  
No.9, Rajaji Street, Ramakrishna Nagar,  
Valasaravakkam, Chennai – 600 087.  
Telephone: 044 24863868, Telefax: 044 24865956.  
E.Mail:sk@envkem.com.www.envkem.in.

### 2. HAZARDS IDENTIFICATION

**HAZARDOUS SUBSTANCE. DANGEROUS GOODS**

Classified as hazardous according to the criteria of NOHSC.

**Hazard Category:** Xn Harmful, C Corrosive,**Risk phrases:** R22 Harmful if swallowed, R35 causes severe burns, R41 Risk of serious damage to eyes.**Safety phrases:** S24/25 Avoid contact with skin & eyes, S36/37/39 Wear suitable protective clothing, gloves and eye/face protection, S26 In case of contact with eyes, rinse immediately with plenty of water and contact a doctor or Poisons Information Centre. S45 In case of accident or if you feel unwell, contact a doctor or Poisons Information Centre immediately (show the label where possible). Harmful if swallowed.**SUSDP Classification:** Schedule 5**ADG Classification:** Class 8 Corrosive

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms:** Nil**Appearance:** Reddish liquid, faint odour of hydrogen chloride.**Ingredients:**

Chemical Name,	CAS No	Proportion	Risk Phrases
Ferric chloride	7705-08-0	42%	R22, R34, R41
Ferrous chloride	7758-94-3	0.1-0.7%	R22, R34, R41
Water	7732-18-5	60-65%	-----

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#### 4. FIRST AID MEASURES

Poison Information Centres in each state can provide additional assistance for scheduled poisons. Phone 131126 from anywhere in Australia

**Ingestion:**

Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Rinse mouth thoroughly with water. Give water to drink. Do NOT induce vomiting. If victim can swallow, have him/her drink 250 to 300 mL of water to dilute material in stomach. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Repeat administration of water. Obtain medical attention immediately.

**Eye Contact:**

Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 1 minutes, by the clock, holding the eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. If irritation persists, repeat flushing. If available, a neutral saline solution may be used to flush the contaminated eye(s) an additional 30 minutes. Obtain medical attention immediately.

**Skin Contact:**

First aiders avoid direct contact with this chemical. As quickly as possible, flush contaminated area with lukewarm, gently running water for at least 30 minutes, by the clock. Under running water, remove contaminated clothing, shoes, and leather goods (e.g. watchbands, belts). If irritation persists, repeat flushing. Obtain medical attention immediately. Completely decontaminate clothing, shoes and leather goods before re-use or discard.

**Inhalation:**

Remove source of contamination or move victim to fresh air. Obtain medical advice immediately.

**Other First Aid:**

Provide general supportive measures (comfort, warmth, rest). Consult a physician and/or the nearest Poison Control Centre for all exposures except minor instances of inhalation contact.

**Notes to physician:**

Treat symptomatically as for strong acids. Can cause corneal burns.

#### 5. FIRE FIGHTING MEASURES

**Specific hazards:**

Non-combustible material

**Fire fighting further advice:**

Not combustible. Decomposes on heating emitting toxic fumes including those of hydrogen chloride. Can react with some metals generating flammable hydrogen gas. Contact with some organic chemicals can produce violent or explosive conditions. If safe to do so, remove containers from the path of fire. Cool containers with water spray.

**Suitable Extinguishing media:**

Water fog (or if unavailable fine water mist or spray), foam, dry agent (carbon dioxide, dry chemical powder)

#### 6. ACCIDENTAL RELEASE MEASURES

**Small Spills:** Spills are slippery. Wear personal protective equipment. Contain using sand or diatomaceous earth. Collect and seal in properly labelled drums. Wash remaining area with large volumes of water.

**Large Spills:**

PRECAUTIONS Restrict access to area. Clear area of unprotected personnel. Provide adequate protective equipment and ventilation. Remove chemicals which can react with the spilled material. Spills are slippery. CLEANUP Contain spill or leak. Do not allow entry into sewers or waterways.

Spilled solutions should be contained by dyking with inert material, such as sand or earth. Solutions can be recovered or carefully diluted with water and cautiously neutralised with alkalis such as lime or soda ash, adjusting pH to 6-10.



DISPOSAL Federal, state and local regulations should be reviewed prior to disposal. May be possible to neutralise, dilute and flush the material into a sewer.

## 7. HANDLING AND STORAGE

**HANDLING** Avoid generating mist or spray. When diluting solution, add material to water in small amounts. Label containers. Keep containers closed when not in use. Empty containers may contain residues which are hazardous. Use smallest possible amounts in designated areas with adequate ventilation. Have emergency equipment (for fires, spills, leaks, etc.) readily available.

**STORAGE CONDITIONS** Materials that react violently with acids should not be stored in the same area. Use corrosion-resistant structural materials and lighting and ventilation systems in the storage area. Store in suitable labelled containers. Keep containers tightly closed when not in use and when empty. Protect from damage. Containers made of nickel alloys are preferred. Storage tanks should be above ground and surrounded with dykes capable of holding entire contents. Limit quantity of material in storage. Restrict access to storage area. Post warning signs when appropriate. Keep storage area separate from populated work areas. Inspect periodically for deficiencies such as damage or leaks.

Class 8 goods are not to be loaded with classes 1, 4.3, 5.1, 5.2, 6\*, 7, or foodstuffs or foodstuff empties.

\* when class 6 is a cyanide and class 8 is an acid. Do not store or transport with strong alkalis.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Standards:** No value assigned for this specific material by the National Occupational Health and Safety Commission (Worksafe Aust). However Exposure Standards for constituents:  
TWA

	ppm	mg/m <sup>3</sup>	
Iron salts, soluble as Fe	-	1	
Hydrogen Chloride	5	7.5	Peak Limitations TLV/TWA: 1 mg/m <sup>3</sup> , peak, NOHSC Australia.

**Engineering Controls:** Maintain concentration below recommended exposure limit.

Engineering control methods to reduce hazardous exposures are preferred. General methods include mechanical ventilation, (dilution and general exhaust), process or personnel enclosure, control of process conditions and process modification (e.g. substitution of a less hazardous material). Administrative controls and personal protective equipment may be also required. Use a corrosion-resistant ventilation system separate from other exhaust ventilation systems. Exhaust directly to the outside. Use local exhaust ventilation, and process enclosure if necessary, to control airborne spray / mists. Supply sufficient air to make up for air removed by exhaust systems.

### Personal Protection:

**RESPIRATORY PROTECTION** : If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.

Have appropriate equipment available for use in emergencies such as spills or fire. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection. Respirators to meet requirements of AS/NZS 1715 and AS/NZS 1716.

**EYE/FACE PROTECTION** Splash proof chemical safety goggles. A face shield may also be necessary.

**SKIN PROTECTION** Impervious gloves, coveralls, boots and/or other resistant protective clothing (nitrile or neoprene). Have a safety shower/eye-wash fountain readily available in the immediate work area.

**NOTE:** Resistance of specific materials can vary from product to product. Evaluate resistance under conditions of use and maintain clothing carefully.

**PERSONAL PROTECTION COMMENTS** Remove contaminated clothing promptly. Keep contaminated clothing in closed containers. Discard or launder before rewearing. Inform laundry personnel of contaminant's hazards. Do not eat, drink or smoke in work areas. Wash hands thoroughly after handling this material. Maintain good housekeeping.

**9. PHYSICAL & CHEMICAL PROPERTIES**

Appearance:	Reddish liquid.
Odour threshold:	Faint odour of hydrogen chloride.
Specific Gravity:	1.45
Flash Point:	Non-combustible (does not burn)
Flammability limits	Non-flammable
Boiling Point	105 - 110 deg C
Melting Point	No data
Vapour Pressure	No data
pH:	1 - 2
Solubility in water:	Completely soluble

**10. STABILITY AND REACTIVITY****INCOMPATIBILITY - MATERIALS TO AVOID:**

STRONG ALKALIS - may react violently

METALS - reaction may produce flammable and explosive hydrogen gas.

ORGANOHALOGEN COMPOUNDS - may react to form spontaneously combustible compounds.

NITRO AND CHLORO ORGANIC COMPOUNDS - may react explosively.

HAZARDOUS DECOMPOSITION PRODUCTS None

HAZARDOUS POLYMERIZATION Does not occur

CORROSIVITY TO METALS Corrosive to steel, aluminium, tin, zinc and most metals.

Fire/Explosion Hazard:

EXPLOSION DATA - SENSITIVITY TO MECHANICAL IMPACT Not applicable

EXPLOSION DATA - SENSITIVITY TO STATIC CHARGE Not applicable

FIRE HAZARD COMMENTS This product and its solutions will not burn or support combustion.

However, reaction with a number of commonly encountered oxidisable materials (see Chemical Reactivity) can generate sufficient heat to ignite nearby combustible materials.

FIRE EXTINGUISHING AGENTS Use an extinguisher appropriate to the material which is burning

FIRE FIGHTING PROCEDURES Water can be used to extinguish a fire in an area where sodium hydroxide is stored.

COMBUSTION PRODUCTS None

Fire fighters to wear full body protective clothing with breathing apparatus

**11. TOXICOLOGICAL INFORMATION****Acute Effects:****Ingestion:**

Burning of the mouth, throat and oesophagus; vomiting; diarrhoea; abdominal pain.

**Eye contact:**

Severe irritant. Can penetrate deeply causing irritation or severe burns depending on the concentration and duration of exposure. In severe cases, ulceration and permanent damage may occur.

**Skin contact:**

Contact with the skin may result in irritation. May cause staining of the skin. Irritation will continue until removed. Severity depends on concentration and duration of exposure.

**Inhalation:**

Effects of inhaling spray & mists have not been clearly established. Most references indicate that irritation of the nose, throat and lungs would occur due to the corrosive nature of the product. Inhalation of vapour unlikely due to low vapour pressure.

**Long term Effects:**

HEALTH EFFECTS Possible erosion of teeth, bronchial irritation.

CARCINOGENICITY Not classed as a carcinogen by NOHSC

TERATOGENICITY AND EMBRYOTOXICITY Insufficient information

TOXICOLOGICAL SYNERGISTIC MATERIALS Insufficient information

MUTAGENICITY Insufficient information

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POTENTIAL FOR ACCUMULATION

None

**Toxicity Data:** Oral LD50 (rat) for ferric chloride (constituent) 316 mg/kg**12. ECOLOGICAL INFORMATION**

Avoid contaminating waterways.

**13. DISPOSAL CONSIDERATIONS**

Refer to State Land Waste Management Authority. Decontaminate empty containers before disposal, by triple rinsing with water, using rinse water in further processing or neutralize rinse water.

**14. TRANSPORT INFORMATION**

<b>UN No:</b>	2582
<b>Proper shipping name:</b>	FERRIC CHLORIDE SOLUTION
<b>Class:</b>	8
<b>Packing Group:</b>	3
<b>Hazchem Code:</b>	2Z
<b>Segregation</b>	not to be loaded with classes 1, 4.3, 5.1, 5.2, 6, 7, class 8 strong alkalis or foodstuffs or
<b>Dangerous Goods</b>	foodstuff empties.

**15. REGULATORY INFORMATION**

Classified as hazardous according to the criteria of NOHSC,

**R-phrases:** R22 Harmful if swallowed, R35 causes severe burns, R41 Risk of serious damage to eyes.**S-phrases:** S24/25 Avoid contact with skin & eyes, S36/37/39 Wear suitable protective clothing, gloves and eye/face protection, S26 In case of contact with eyes, rinse immediately with plenty of water and contact a doctor or Poisons Information Centre. S45 In case of accident or if you feel unwell, contact a doctor or Poisons Information Centre immediately (show the label where possible).**16. OTHER INFORMATION****FERRIC CHLORIDE MSDS issued Mar 2003, Revision 1 –MAY – 2014, Revision – MARCH - 2015**