SAFETY DATA SHEET

Creation Date 02 February 2017 Revision Date 02 February 2017 Revision Number 1

1. IDENTIFICATION

Product identifier

Product Name 1995 & Electrolyte Proprietary Solution

Stock # TES-170.10

Other means of identification

Synonyms: Ferric chloride, hexahydrate
Ferric trichloride hexahydrate
Iron (III), chloride, hexahydrate
Iron trichloride hexahydrate
Iron chloride ($FeCl_3$), hexahydrate

CAS #: 10025-77-1
RTECS # NO5425000
CI#: Not available

Recommended Use 1995 to be used for M24 Tester and Electrolyte to be used for ET18 and M18 Testers.

Company: EURO TOOL, Inc.

Emergency Contact: ChemTel 365/24/7
US/Canada toll free: 1-800-255-3924
All other locales: + 1 813-248-0585
Collect calls are accepted.

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

Label elements

Danger

Hazard statements
Harmful if swallowed
Causes severe skin burns and eye damage
May be corrosive to metals

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see .? on this label)
Absorb spillage to prevent material damage
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 CENTER or doctor/physician.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage
Store locked up
Store in corrosive resistant/ .? container with a resistant inner liner

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
Ferric Chloride hexahydrate 10025-77-1	10025-77-1	100	*

4. FIRST AID MEASURES

First aid measures

General Advice: Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Skin Contact: Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact: Flush eye with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention. Call a physician immediately.

Most important symptoms and effects, both acute and delayed

Symptoms Severe skin and eye irritation or burns. May cause corneal injury. Causes digestive (gastrointestinal) tract irritation. May cause gastrointestinal (digestive) tract burns. May affect the liver.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: If involved the followng products of combustion may be produced: Hydrogen Chloride gas, iron oxides

Specific hazards: No information available.

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Avoid breathing dust.

Environmental precautions Do not let product enter drains. Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Use appropriate tools to put the spilled solid in a suitable waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials. Do not allow contact with water.

Safe Handling Advice
Avoid contact with skin, eyes and clothing. Do not ingest. Do not smoke. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice. Keep container tightly sealed. Use only in well-ventilated areas. Wear personal protective equipment.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Deliquescent. Keep container tightly closed in a dry and well-ventilated place. Protect from moisture. Store at room temperature in the original container. Store in a segrated and approved area.

Incompatible Materials:
Strong bases. Oxidizing agents. Allyl chloride. Ethylene Ioxide. Metals. Potassium. Sodium.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Ferric Chloride hexahydrate 10025-77-1	None	1 mg/m³TWA (as Fe)	None	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Ferric Chloride hexahydrate 10025-77-1	1 mg/m³TWA (as Fe)	1 mg/m³TWA (as Fe) 2 mg/m³STEL (as Fe)	1 mg/m³TWA (as Fe)	1 mg/m³TWAEV (as Fe)

Australia and Mexico

Components	Australia	Mexico
Ferric Chloride hexahydrate 10025-77-1	1 mg/m³TWA (as Fe)	1 mg/m³TWA (as Fe) 2 mg/m³STEL (as Fe)

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles or Safety glasses with side-shields

Skin and body protection: Long sleeved clothing. Chemical resistant apron. Gloves.

Respiratory protection: Effective dust mask. or. Wear respirator with dust filter.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical state:
Liquid

Appearance:
Lumps.

Color:
Yellow. Yellow Brown.

Odor:
Odorless.

Taste
No information available

Molecular/Formula weight:
270.30 g/mol

Formula:
FeCl3-6H2O

Flammability:
No information available

Flash point (°C):
No data available

Flashpoint (°C/°F):
No information available.

Flash Point Tested according to:
Not available

Autoignition Temperature (°C/°F):
No information available

Lower Explosion Limit (%):
No information available

Upper Explosion Limit (%):
No information available

pH:
1.8

Melting point/range(°C/°F):
37°C/ 99°F

Boiling point/range(°C/°F):
280-285°C/ 536-545°F

Decomposition temperature(°C/°F):
No information available

Bulk density:
No information available

Specific gravity:
1.82

Density (g/cm3):
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
No information available

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

Partition coefficient (n-octanol/water):
No information available

Viscosity:
No information available

Miscibility:
No information available

Solubility:
Soluble in water: 920 g/l @ 20°C
Easily soluble in cold water
Easily soluble in hot water
Easily soluble in diethyl ether
Easily soluble in acetone
Soluble in Alcohol

10. STABILITY AND REACTIVITY

Reactivity
Reactive with oxidizing agents
Reacts with alkali metals
Reactive with allyl chloride, ethylene loxide, potassium sodium
It may react with water to produce toxic and corrosive fumes of hydrgen chloride. This information comes from looking at at the hazards for Ferric Chloride, anhydrous

Chemical stability

Stability: Deliquescent. Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Exposure to moisture. Exposure to moist air. Incompatible materials.

Incompatible Materials: Strong bases. Oxidizing agents. Allyl chloride. Ethylene loxide. Metals. Potassium. Sodium.

Hazardous decomposition products: Hydrogen chloride gas. Iron oxides.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Toxicity

Component Information

Ferric Chloride hexahydrate - 10025-77-1

LD50/oral/rat = = 900 mg/kg Oral LD50 Rat
LD50/oral/mouse = No information available
LD50/dermal/rat = No information available
LD50/dermal/rabbit = > 2000 mg/kg
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No infomation available
Other LD50 or LC50information = No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 900mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = > 2000mg/kg

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available

VALUE - Dust/Mist = No information available
Symptoms

Skin Contact: Causes severe irritation and burns. Ferric chloride has been infrequently associated with skin sensitization in humans.

Eye Contact: Causes severe eye irritation and possible burns. Effects can vary from mild irritation to chemical conjunctivitis and corneal damage depending on the intensity and duration of exposure.

Inhalation Causes irritation of the respiratory tract with possible burns.

Ingestion Harmful if swallowed. Causes irritation of the gastrointestinal (digestive) tract with nausea, vomiting, diarrhe, hemorrage and possible burns. May cause severe and permanent damage to the digestibe tract. Delayed effects may include cardiovascular disturbances, liver damgae, kidney damage, metabolic acidosis, cerebral coma and possible death. It may also affect behavior/central nervous system (convulsions, lethargy)..

Aspiration hazard No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Ingestion: May affect liver/spleen (increased iron levels and damage), urinary system (kidney, ureter, bladder), blood (changes in white blood cell count), central nervous system, and cardiovascular system. . May cause eye discoloration.

Sensitization: No information available

Mutagenic Effects: May affect genetic material

Carcinogenic effects: Not considered carcinogenic

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Ferric Chloride hexahydrate	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Reproductive toxicity No data is available

Reproductive Effects: May cause adverse reproductive effects based on animal data
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available
STOT - repeated exposure No information available
Target Organs: Liver. Skin. Eyes.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Ferric Chloride hexahydrate	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No:	UN3260
Proper Shipping Name:	Corrosive solid, acidic, inorganic, n.o.s. (Ferric Chloride, hexahydrate)
Hazard Class:	8
Subsidiary Risk:	No information available
Packing Group:	III
ERG No:	154
Marine Pollutant	No data available
DOT RQ (lbs):	No information available
Symbol(s):	G

TDG (Canada)

UN-No:	UN3260
Proper Shipping Name:	Corrosive solid, acidic, inorganic, n.o.s.
Hazard Class:	8
Subsidiary Risk:	No information available
Packing Group:	III
Description:	No information available

ADR

UN-No:	UN3260
Proper Shipping Name:	Corrosive solid, acidic, inorganic, n.o.s.
Hazard Class:	8
Packing Group:	III
Subsidiary Risk:	No information available
Classification Code:	No information available
Description:	No information available
CEFIC Tremcard No:	No information available

IMO / IMDG

UN-No:	UN3260
Proper Shipping Name:	Corrosive solid, acidic, inorganic, n.o.s.
Hazard Class:	8
Subsidiary Risk:	No information available

14. TRANSPORT INFORMATION

Packing Group: III
Description: No information available
IMDG Page: No information available
Marine Pollutant No information available
EMS: F-A
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s.
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s.
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Description: No information available

IATA

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s.
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 8L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Ferric Chloride hexahydrate	Not Listed	Not present	Present	Not present	Present [23517]	Present	Not present

U.S. Regulations

Ferric Chloride hexahydrate

Pennsylvania RTK: Present (as iron salts)
Pennsylvania RTK - Environmental Hazard List Present (as iron salts)
Minnesota - Hazardous Substance List: Present (as iron solulble salts)
California Directors List of Hazardous Substances: Present (as iron soluble salts; refers only to water-soluble salts not mixed in food or animal feed)
FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 184.1297

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Ferric Chloride hexahydrate	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting *de minimis*
Ferric Chloride hexahydrate	None	None	None	None	None

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Ferric Chloride hexahydrate	Not Applicable	Not Applicable

Canada

WHMIS hazard class:
Non-controlled

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	Canada (DSL)	Canada (NDSL)
Ferric Chloride hexahydrate	Not Listed	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting
Ferric Chloride hexahydrate	Not listed	Not listed

EU Classification

R-phrase(s)
R22 - Harmful if swallowed.
R34 - Causes burns.

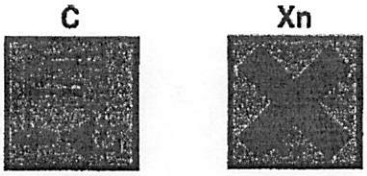
S -phrase(s)
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

Components	Classification	Concentration Limits:	Safety Phrases

Ferric Chloride hexahydrate		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
C - Corrosive.
Xn - Harmful.



16. OTHER INFORMATION

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet