



3307 Industrial 25th Street
Fort Pierce, FL 34946

SAFETY DATA SHEET

Creation Date 02 February 2017

Revision 02 February 2022

Revision Number 1

Product identifier

Product Name 1995 & Electrolyte Proprietary Solution

Other means of identification

Synonyms:

Ferric chloride, hexahydrate
Ferric trichloride hexahydrate
Iron (III), chloride, hexahydrate
Iron trichloride hexahydrate
Iron chloride (FeCl₃), hexahydrate
10025-77-1
NO5425000
Not available

CAS #:
RTECS #
CI#:

Recommended Use

Electrolyte to be used only with ET18 or M18 RS Mizar Gold Testers
1995 to be used only with M24 RS Mizar Gold Tester

Details of the supplier of the safety data sheet.

DYMOND Inc.

3307 Industrial 25th Street
Fort Pierce, FL 34946



IMPORTED BY:
PRECISION TOOLS & TECHNOLOGY
57 Caswell Street, East Brisbane, QLD. 4169.
EMERGENCY PHONE: 1300 852 999

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

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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



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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 following 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 segregated and approved area.

Incompatible Materials:

Strong bases. Oxidizing agents. Allyl chloride. Ethylene oxide. Metals. Potassium. Sodium.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters**

Product code: F1010

Product Name

1995 & Electrolyte Proprietary Solution

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National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Ferric Chloride hexahydrate 10025-77-1	None	1 mg/m ³ TWA (as Fe)	None	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Ferric Chloride hexahydrate 10025-77-1	1 mg/m ³ TWA (as Fe)	1 mg/m ³ TWA (as Fe) 2 mg/m ³ STEL (as Fe)	1 mg/m ³ TWA (as Fe)	1 mg/m ³ TWAEV (as Fe)

Australia and Mexico

Components	Australia	Mexico
Ferric Chloride hexahydrate 10025-77-1	1 mg/m ³ TWA (as Fe)	1 mg/m ³ TWA (as Fe) 2 mg/m ³ STEL (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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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid	Appearance: Lumps.	Color: Yellow. Yellow Brown.
Odor: Odorless.	Taste No information available	Molecular/Formula weight: 270.30 g/mol
Formula: FeCl ₃ -6H ₂ O	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 oxide, potassium sodium

It may react with water to produce toxic and corrosive fumes of hydrogen chloride. This information comes from looking 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 oxide. Metals. Potassium. Sodium.

Hazardous decomposition products: Hydrogen chloride gas. Iron oxides.

Other Information

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Corrosivity: No information available

Special Remarks on Corrosivity: No information available

1.1. 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 information available
Other LD50 or LC50 information = 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.



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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
Ingestion Causes irritation of the respiratory tract with possible burns.
Harmful if swallowed. Causes irritation of the gastrointestinal (digestive) tract with nausea, vomiting, diarrhea, hemorrhage and possible burns. May cause severe and permanent damage to the digestive tract. Delayed effects may include cardiovascular disturbances, liver damage, 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.



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12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available

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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



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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

Product code: F1010

Product Name 1995 & Electrolyte Proprietary Solution

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



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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.
<i>Ferric Chloride hexahydrate</i>	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 soluble 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)

Product code: F1010

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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 <i>de minimis</i>
Ferric Chloride hexahydrate	None	None	None	None	None

U.S. TSCA

Components	TSCA Section 6(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



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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 Mandatory Reporting
Ferric Chloride hexahydrate	Not listed	Not listed

EU Classification**R-phrases(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
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Product code: F1010

Product Name

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Ferric Chloride hexahydrate	No information	
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The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

C - Corrosive.

Xn - Harmful.



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16. OTHER INFORMATION

Preparation Date: 02/02/2017
 Revision Date: 02/02/2022
 Prepared BY: Bart Anderson

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