

Ferric Chloride Solution

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 12/12/2013 Revision date: 3/3/2023 Supersedes: 1/17/2017 Version: 1.2

SECTION 1: Identification

1.1. Identification

Product form : Mixtures
Product name : Ferric Chloride Solution
Product code : LC14380

1.2. Recommended use and restrictions on use

Use of the substance/mixture : For laboratory and manufacturing use only.
Recommended use : Laboratory chemicals
Restrictions on use : Not for food, drug or household use

1.3. Supplier

LabChem, Inc.
1010 Jackson's Pointe Ct.
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or +1-703-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Skin corrosion/irritation Category 1C	H314	Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1	H318	Causes serious eye damage
Full text of H statements : see section 16		

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger

Hazard statements (GHS US) : H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage

Precautionary statements (GHS US) : P260 - Do not breathe mist, vapors, spray.
P264 - Wash exposed skin thoroughly after handling.
P280 - Wear protective gloves, eye protection.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a poison center or doctor/physician.
P363 - Wash contaminated clothing before reuse.

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P405 - Store locked up.

P501 - Dispose of contents/container to comply with local, state and federal regulations.

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
Ferric Chloride, Hexahydrate	CAS-No.: 10025-77-1	71	Acute Tox. 4 (Oral), H302 Skin Corr. 1C, H314 Eye Dam. 1, H318
Water	CAS-No.: 7732-18-5	29	Not classified

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
First-aid measures after skin contact	: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.
First-aid measures after eye contact	: 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.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/effects	: Causes severe skin burns and eye damage.
Symptoms/effects after eye contact	: Causes serious eye damage.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

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5.2. Specific hazards arising from the chemical

No additional information available

5.3. Special protective equipment and precautions for fire-fighters

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|--------------------------------|---|
| Firefighting instructions | : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

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|----------------------|--|
| Protective equipment | : Safety glasses. Gloves. Protective clothing. |
| Emergency procedures | : Evacuate unnecessary personnel. |

6.1.2. For emergency responders

- | | |
|----------------------|--|
| Protective equipment | : Equip cleanup crew with proper protection. |
| Emergency procedures | : Ventilate area. |

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

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|-------------------------|--|
| Methods for cleaning up | : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. |
|-------------------------|--|

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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|-------------------------------|---|
| Precautions for safe handling | : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe mist, vapors, spray. |
| Hygiene measures | : Wash exposed skin thoroughly after handling. Wash contaminated clothing before reuse. |

7.2. Conditions for safe storage, including any incompatibilities

- | | |
|------------------------|---|
| Technical measures | : Comply with applicable regulations. |
| Storage conditions | : Keep only in the original container in a cool, well ventilated place away from : incompatible materials. Keep container closed when not in use. |
| Incompatible products | : Strong bases. metals. |
| Incompatible materials | : Sources of ignition. Direct sunlight. |

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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No additional information available

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Ferric Chloride, Hexahydrate (10025-77-1)

USA - NIOSH - Occupational Exposure Limits

NIOSH REL (TWA)	1 mg/m ³
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Water (7732-18-5)

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Face shield. Gloves. Protective clothing. Safety glasses.

Hand protection:

Wear protective gloves.

Eye protection:

Chemical goggles or face shield

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Respiratory protection not required in normal conditions

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: amber
Odor	: None.
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available

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Solubility	: Soluble in water.
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Thermal decomposition generates : Corrosive vapors.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

metals. Strong bases.

10.6. Hazardous decomposition products

Hydrogen chloride. iron oxide. Thermal decomposition generates : Corrosive vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Ferric Chloride, Hexahydrate (10025-77-1)

LD50 oral rat	1872 mg/kg (Rat, Oral)
ATE US (oral)	1872 mg/kg body weight

Water (7732-18-5)

LD50 oral rat	≥ 90000 mg/kg
ATE US (oral)	90000 mg/kg body weight

Skin corrosion/irritation	: Causes severe skin burns.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitization	: Not classified

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Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Likely routes of exposure	: Skin and eye contact.
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/effects	: Causes severe skin burns and eye damage.
Symptoms/effects after eye contact	: Causes serious eye damage.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Harmful to aquatic life.

Ferric Chloride, Hexahydrate (10025-77-1)

LC50 fish 1	75.6 mg/l (96 h, Gambusia affinis, Literature study, Anhydrous form)
EC50 Daphnia 1	9.6 mg/l (48 h, Daphnia magna, Literature study)

12.2. Persistence and degradability

Ferric Chloride Solution

Persistence and degradability	Not established.
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Ferric Chloride, Hexahydrate (10025-77-1)

Persistence and degradability	Biodegradability in soil: not applicable. Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Water (7732-18-5)

Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

Ferric Chloride Solution

Bioaccumulative potential	Not established.
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Ferric Chloride, Hexahydrate (10025-77-1)

BCF fish 1	≤ 100 (Pisces, Anhydrous form)
Bioaccumulative potential	No bioaccumulation data available.

Water (7732-18-5)

Bioaccumulative potential	Not established.
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12.4. Mobility in soil

Ferric Chloride, Hexahydrate (10025-77-1)

Ecology - soil	No (test)data on mobility of the substance available.
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12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number

DOT NA No : UN2582

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Ferric chloride, solution

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : 8

Hazard labels (DOT) : 8

14.4. Packing group

Packing group (DOT) : III

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

UN-No.(DOT) : UN2582

DOT Special Provisions (49 CFR 172.102) : B15 - Packaging must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance.

IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).

T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)

TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

DOT Packaging Exceptions (49 CFR 173.xxx) : 154

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 241

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DOT Quantity Limitations Passenger aircraft/rail (49 : 5 L

CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 60 L

CFR 175.75)

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Ferric Chloride Solution

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
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All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

Ferric Chloride, Hexahydrate	CAS-No. 10025-77-1	71%
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Ferric Chloride, Hexahydrate (10025-77-1)

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
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15.2. International regulations

CANADA

Water (7732-18-5)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 03/03/2023

Other information : None.

Full text of H- and EUH-statements: see section 16

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage

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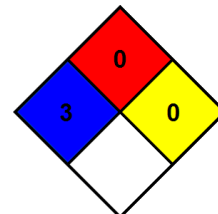
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Full text of H- and EUH-statements: see section 16

H318	Causes serious eye damage
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NFPA health hazard	: 3 - Materials that, under emergency conditions, can cause serious or permanent injury.
NFPA fire hazard	: 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity	: 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating	
Health	: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
Flammability	: 0 Minimal Hazard - Materials that will not burn
Physical	: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal protection	: H - Splash goggles, Gloves, Synthetic apron, Vapor respirator

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