

SECTION 1: Identification

1.1. Identification

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

1.2. Relevant identified uses of the substance or mixture and uses advised against

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

1.3. Details of the supplier of the safety data sheet

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
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 011-703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation Category 1C H314
Serious eye damage/eye irritation Category 1 H318
Hazardous to the aquatic environment - Acute Hazard Category 2 H401

Full text of H statements : see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H314 - Causes severe skin burns and eye damage
H401 - Toxic to aquatic life
Precautionary statements (GHS-US) : P260 - Do not breathe mist, vapors, spray
P264 - Wash exposed skin thoroughly after handling
P273 - Avoid release to the environment
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
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
P405 - Store locked up
P501 - Dispose of contents/container to comply with local, state and federal regulations
If inhaled: Remove person to fresh air and keep comfortable for breathing

2.3. Other hazards

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS US)

Not applicable

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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 Aquatic Acute 2, H401 |
| 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, both acute and delayed

- Symptoms/injuries : Causes severe skin burns and eye damage.
- Symptoms/injuries after eye contact : Causes serious eye damage.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

- Reactivity : Thermal decomposition generates : Corrosive vapors.

5.3. Advice for firefighters

- 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

- 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

- 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.

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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

- 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 the 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

| Ferric Chloride, Hexahydrate (10025-77-1) | | |
|---|--------------------------------------|---------------------|
| NIOSH | NIOSH REL (TWA) (mg/m ³) | 1 mg/m ³ |
| Water (7732-18-5) | | |
| Not applicable | | |

8.2. Exposure controls

- Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate general and local exhaust ventilation.
- Personal protective equipment : Avoid all unnecessary exposure. 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 : Wear appropriate mask.
- 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

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| | |
|---------------------------|---------------------|
| Relative density | : No data available |
| 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

Likely routes of exposure : Skin and eye contact

Acute toxicity : Not classified

| Ferric Chloride, Hexahydrate (10025-77-1) | |
|---|-----------------------------|
| LD50 oral rat | 1872 mg/kg (Rat) |
| ATE US (oral) | 1872.000 mg/kg body weight |
| Water (7732-18-5) | |
| LD50 oral rat | ≥ 90000 mg/kg |
| ATE US (oral) | 90000.000 mg/kg body weight |

Skin corrosion/irritation : Causes severe skin burns and eye damage.

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

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Symptoms/injuries after eye contact : Causes serious eye damage.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Harmful to aquatic life.

| Ferric Chloride Solution | |
|---|--|
| LC50 fish 1 | < |
| Ferric Chloride, Hexahydrate (10025-77-1) | |
| EC50 Daphnia 1 | 9.6 mg/l (EC50; 48 h; Daphnia magna) |
| LC50 fish 2 | 75.6 mg/l (LC50; 96 h; Gambusia affinis) |

12.2. Persistence and degradability

| Ferric Chloride Solution | |
|---|--|
| Persistence and degradability | Not established. |
| Ferric Chloride, Hexahydrate (10025-77-1) | |
| Persistence and degradability | Biodegradability: not applicable. Biodegradability in soil: not applicable. No test data on mobility of the substance available. |
| Biochemical oxygen demand (BOD) | Not applicable |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |
| Water (7732-18-5) | |
| Persistence and degradability | Not established. |

12.3. Bioaccumulative potential

| Ferric Chloride Solution | |
|---|------------------------------------|
| Bioaccumulative potential | Not established. |
| Ferric Chloride, Hexahydrate (10025-77-1) | |
| BCF fish 1 | <= 100 (BCF) |
| Bioaccumulative potential | No bioaccumulation data available. |
| Water (7732-18-5) | |
| Bioaccumulative potential | Not established. |

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known effects from this product.
GWPmix comment : No known effects from this product.
Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment 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

Department of Transportation (DOT)

In accordance with DOT
Transport document description : UN2582 Ferric chloride, solution, 8, III
UN-No.(DOT) : UN2582
Proper Shipping Name (DOT) : Ferric chloride, solution

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Transport hazard class(es) (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136
Packing group (DOT) : III - Minor Danger
Hazard labels (DOT) : 8 - Corrosive



DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 241
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 Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L
DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
Other information : No supplementary information available.

SECTION 15: Regulatory information

15.1. US Federal regulations

Ferric Chloride Solution

| | |
|-------------------------------------|---------------------------------|
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard |
|-------------------------------------|---------------------------------|

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

| | | |
|------------------------------|-------------------|-----|
| Ferric Chloride, Hexahydrate | CAS No 10025-77-1 | 71% |
|------------------------------|-------------------|-----|

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Ferric Chloride, Hexahydrate (10025-77-1)

| | |
|-------------------------------------|---------------------------------|
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard |
|-------------------------------------|---------------------------------|

15.2. International regulations

CANADA

Ferric Chloride Solution

| | |
|----------------------|------------------------------|
| WHMIS Classification | Class E - Corrosive Material |
|----------------------|------------------------------|

Ferric Chloride, Hexahydrate (10025-77-1)

| | |
|----------------------|------------------------------|
| WHMIS Classification | Class E - Corrosive Material |
|----------------------|------------------------------|

Water (7732-18-5)

| | |
|----------------------|---|
| WHMIS Classification | Uncontrolled product according to WHMIS classification criteria |
|----------------------|---|

EU-Regulations

No additional information available

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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

Revision date : 01/17/2017

Other information : None.

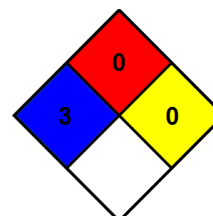
Full text of H-phrases: see section 16:

| | |
|------|---|
| H302 | Harmful if swallowed |
| H314 | Causes severe skin burns and eye damage |
| H318 | Causes serious eye damage |
| H401 | Toxic to aquatic life |

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 dire 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.



HMIS III 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
H - Splash goggles, Gloves, Synthetic apron, Vapor respirator

SDS US LabChem

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