



# Safety Data Sheet

## 1. Identification

**Product identifier** Iron 4.5  
**Chemical name** Hydroxyethylenediaminetriacetic acid, ferric complex in water Ferric ammonium EDTA  
**Synonyms**  
**Recommended use** Agriculture. Chelated Micronutrient.  
**Recommended restrictions** None known.

## **Manufacturer/Importer/Supplier/Distributor Information**

**Company name** CHS Inc  
**Address** 5500 Cenex Drive  
Inver Grove Heights, MN 55077 US  
**Telephone** 1-651-355-6000  
**Website** www.chsinc.com  
**Contact person** EH&S/Regulatory Department  
**Emergency phone number** CHEMTREC (24 hours): 1-800-424-9300

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards** Not classified.

**OSHA defined hazards** Not classified.

### **Label elements**

**Hazard symbol** None.  
**Signal word** None.  
**Hazard statement** The mixture does not meet the criteria for classification.

### **Precautionary statement**

**Prevention** Observe good industrial hygiene practices.  
**Response** Wash hands after handling.  
**Storage** Store away from incompatible material.  
**Disposal** Dispose of waste and residues in accordance with local authority requirements.

**Hazard(s) not otherwise classified (HNOC)** Not classified.

### **Supplemental information**

Not applicable.

## 3. Composition/information on ingredients

### **Substances**

<b>Chemical name</b>	<b>CAS number</b>	<b>%</b>
Water	7732-18-5	50 - 60
Ethylenediaminetetraacetic acid, Ferric ammonium Salt	21265-50-9	30 - 40



## Safety Data Sheet

### Composition comments

All concentrations are in weight unless ingredient is a gas. Gas concentrations are in percent by volume.

The Safety Data Sheet is not a guarantee of product specification or NPK value(s). NPK content is on specified sales orders, customer invoices, or product specification sheets obtained from supplier.

### 4. First-aid measures

#### Eye contact

Check for and remove contact lenses. Flush immediately with copious amounts of water or normal saline (minimum of 15 minutes), holding eyelids apart to ensure complete irrigation of the eye and eyelid tissue. Take exposed individual to a health care professional, preferably an ophthalmologist, for further evaluation.

#### Skin contact

Remove contaminated clothing, shoes and equipment. Wash exposed area with plenty of soap and water. Repeat washing. If redness or irritation occurs, seek medical attention. Wash contaminated clothing before reuse.

#### Inhalation

No adverse effects anticipated. If necessary, remove victim to fresh air and loosen clothing. Get medical attention.

#### Ingestion

Rinse mouth thoroughly. Drink 1 or 2 glasses of water. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention.

#### Most important symptoms/effects, acute and delayed

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

#### Indication of immediate medical attention and special treatment needed

Treat symptomatically.

#### General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 5. Fire-fighting measures

#### Suitable extinguishing media

Water fog. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>). Foam.

#### Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

#### Specific hazards arising from the chemical

The product is not flammable. Heating may cause the release of hazardous vapors.

#### Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for firefighting follow the general fire precautions indicated in the workplace.

#### Fire-fighting equipment/instructions

Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from the fire area if you can do so without risk.

### 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

Avoid inhalation of vapors and spray mist and contact with skin and eyes. Wear suitable protective clothing. For personal protection see Section 8 of the SDS.



## Safety Data Sheet

### Methods and materials for containment and cleaning up

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb with vermiculite, dry sand or earth and place into containers. After removal flush contaminated area thoroughly with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not contaminate water. Do not allow to enter drains, sewers or watercourses.

## 7. Handling and storage

### Precautions for safe handling

Avoid inhalation of vapors/spray and contact with skin and eyes. Use only with adequate ventilation. Observe good industrial hygiene practices.

### Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a cool, dry well-ventilated place. Store away from incompatible materials.

## 8. Exposure controls/personal protection

### Occupational exposure limits

No exposure limits noted for ingredient(s).

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Exposure guidelines

Follow standard monitoring procedures.

### Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and mists.

### Individual protection measures such as personal protective equipment

#### Eye/face protection

Wear approved safety glasses or goggles.

#### Skin Protection

##### Hand protection

Neoprene gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

##### Other

Wear appropriate clothing to prevent repeated or prolonged skin contact.

##### Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Wear air supplied respiratory protection if exposure concentrations are unknown. In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment.

In the United States of America, if respirators are used, a program should be instituted to assure Compliance with OSHA 29 CFR 1910.134 and ANSI Z88.2.

##### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

### General hygiene consideration

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

### Appearance

Clear dark red-brown liquid.

#### Physical State

Liquid.

#### Form

Liquid.



## Safety Data Sheet

<b>Color</b>	Reddish-brown.
<b>Odor</b>	Bland.
<b>Odor threshold</b>	Not available.
<b>pH</b>	5 – 7 (1% solution)
<b>Melting point/freezing point</b>	Not available.
<b>Crystallization Temp</b>	< 0°F (< -18°C)
<b>Initial boiling point and boiling range</b>	222°F (106°C)
<b>Flash point</b>	Not available.
<b>Evaporation Rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.
<b>Vapor pressure</b>	Same as water.
<b>Vapor Density (Air=1)</b>	Not available.
<b>Specific Gravity (H<sub>2</sub>O=1)</b>	1.343 g/ml @ 60°F
<b>Solubility</b>	Completely miscible.
<b>Partition coefficient (n-octanol/water)</b>	logP <sub>ow</sub> <0.
<b>Auto-ignition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	NA

### 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Stable under normal temperature conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Heat. Extreme temperatures. Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents. Avoid contact with aluminum, nickel, zinc, copper and copper alloys.
<b>Hazardous decomposition products</b>	Carbon oxides fumes (CO, CO <sub>2</sub> ). Nitrogen and metal oxides.

### 11. Toxicological information

#### Information on likely routes of exposure

<b>Ingestion</b>	May cause discomfort if swallowed.
<b>Inhalation</b>	When heated, the vapors/fumes given off may cause respiratory tract irritation.
<b>Skin contact</b>	Prolonged or repeated skin contact may cause irritation.
<b>Eye contact</b>	May cause eye irritation on direct contact.

**Symptoms related to the physical, chemical and toxicological characteristics** Eye and skin contact: Irritant effects. Ingestion: Headaches, nausea and vomiting.

#### Information on toxicological effects

**Acute toxicity** May cause discomfort if swallowed.

<b>Product</b>	<b>Species</b>	<b>Test Results</b>
4.5% Fe HEDTA (CAS Mixture)		
<b>Acute Oral LD50</b>	Mouse	12400 mg/kg, estimated
	Rabbit	8000 mg/kg, estimated
	Rat	> 2000 mg/kg, 96 hr



# Safety Data Sheet

<b>Skin corrosion/irritation</b>	Prolonged exposure may cause skin irritation.
<b>Serious eye damage/eye irritation</b>	May cause eye irritation on direct contact.
<b>Respiratory sensitization</b>	Based on available data, the classification criteria are not met.
<b>Skin sensitization</b>	Not a skin sensitizer.
<b>Germ cell mutagenicity</b>	No data available to indicate product or any component present at greater than 0.1% are mutagenic or genotoxic.
<b>Carcinogenicity</b>	IARC, ACGIH, NTP and OSHA do not classify this material as a carcinogen or suspect carcinogen.
<b>Reproductive toxicity</b>	Due to lack of data the classification is not possible.
<b>Specific target organ toxicity-single exposure</b>	Due to lack of data the classification is not possible.
<b>Specific target organ toxicity-repeated exposure</b>	Based on available data, the classification criteria are not met.
<b>Aspiration hazard</b>	Not classified.
<b>Chronic effects</b>	Prolonged exposure may cause chronic effects.
<b>Further information</b>	No other specific acute or chronic health impact noted.

## 12. Ecological information

**Ecotoxicity** The mixture is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species	Test Results
4.5% Fe HEDTA (CAS Mixture)		
Fish LC50	Fish	20296 mg/l, 96 hours, estimated

<b>Persistence and degradability</b>	This product is not expected to be readily biodegradable (based on tests with structurally related products).
<b>Bioaccumulative potential</b>	LogP <sub>ow</sub> = -6.35 (based on tests with structurally related products).
<b>Mobility in soil</b>	This product is water soluble and may disperse in soil.
<b>Other adverse effects</b>	No data available.

## 13. Disposal considerations

<b>Disposal instructions</b>	Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.



## Safety Data Sheet

### Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied.

### 14. Transport information

**DOT** Not regulated as a hazardous material by DOT.

**IATA** Not regulated as a dangerous goods.

**IMDG** Not regulated as a dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not established.

### 15. Regulatory information

**US federal regulations** All components of this product are on the U.S. EPA TSCA Inventory List or are exempt from TSCA inventory requirements. This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**  
Not regulated.

**US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**  
Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**  
Not listed.

**SARA 304 Emergency Release Notification**  
Not regulated.

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories** Immediate Hazard - No  
Delayed Hazard - Yes  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance** No

**SARA 311/312 Hazardous Chemical** No

**SARA 313** The following components are subject to reporting levels established by SARA Title III, Section 313.  
Ethylenediaminetetraacetic acid, ferric ammonium salt 21265-50-9

#### Other federal regulations

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**  
Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**  
Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**Food and Drug Administration (FDA)** Not regulated.



# Safety Data Sheet

## US state regulations

This product does contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

### US Massachusetts RTK – Substance List

Not regulated.

### US New Jersey Worker and Community Right-to-Know Act

Not listed.

### US Pennsylvania RTK – Hazardous Substances

Not listed.

### US Rhode Island RTK

Not regulated.

### US California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

## International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act Inventory	Yes

\*A “Yes” indicates this product complies with the inventory requirements administered by the governing country(s).

A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

**Issue date** 22-December-2016

**Revision date** 8/12/25

**Version #** 1.0 SDS

## NFPA Ratings



## References

EPA: Acquire database  
HSDB® – Hazardous Substances Data Bank  
IARC Monographs. Overall Evaluation of Carcinogenicity  
National Toxicology Program (NTP) Report on Carcinogens  
ACGIH Documentation of the Threshold Limit Value and Biological Exposure Indices

## Preparation

The preparation of this MSDS was in accordance with ANSI Z400.1-2010.

## Disclaimer

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet (SDS) and was prepared pursuant to Government regulation(s) that identify specific types of information to be provided. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product specifically should advise all of their employees, agents, contractors and customers who will use the product of this (M)SDS.