

## SAFETY DATA SHEET

Version 6.10  
Revision Date 05/07/2025  
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## SECTION 1. IDENTIFICATION

## 1.1 Product identifiers

Product name : Ammonium iron(III) citrate

Product Number : F5879

Brand : SIGALD

CAS-No. : 1185-57-5

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

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

## 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

## 1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

## SECTION 2. HAZARDS IDENTIFICATION

**GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Not a hazardous substance or mixture.

**Other hazards**

None known.

SIGALD - F5879

Page 1 of 13

## GHS label elements

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

#### Components

| Chemical name              | CAS No./Unique ID | Concentration (% w/w) | Trade secret |
|----------------------------|-------------------|-----------------------|--------------|
| Ammonium iron(III) citrate | 1185-57-5*        | >= 90 - <= 100        | -            |

\* Indicates that the identifier is a CAS No.

Actual concentration is withheld as a trade secret

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### SECTION 4. FIRST AID MEASURES

If inhaled : After inhalation: fresh air.

In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact : After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed : After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

Most important symptoms and effects, both acute and delayed : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Protection of first-aiders : For personal protection see section 8.

Notes to physician : No data available

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### SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.

Specific hazards during : Not combustible.

fire fighting

Ambient fire may liberate hazardous vapours.

|                                                |                                                                                                                                                                     |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazardous combustion products                  | : Carbon oxides<br><br>Nitrogen oxides (NOx)<br><br>Iron oxides                                                                                                     |
| Specific extinguishing methods                 | : No data available                                                                                                                                                 |
| Further information                            | : Suppress (knock down) gases/vapors/mists with a water spray jet.<br>Prevent fire extinguishing water from contaminating surface water or the ground water system. |
| Special protective equipment for fire-fighters | : In the event of fire, wear self-contained breathing apparatus.                                                                                                    |

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

|                                                                     |                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal precautions, protective equipment and emergency procedures | : Advice for non-emergency personnel:<br>Avoid inhalation of dusts.<br>Evacuate the danger area, observe emergency procedures, consult an expert.<br>Advice for emergency responders:<br>For personal protection see section 8. |
| Environmental precautions                                           | : Do not let product enter drains.                                                                                                                                                                                              |
| Methods and materials for containment and cleaning up               | : Cover drains. Collect, bind, and pump off spills.<br>Observe possible material restrictions (see sections 7 and 10).<br>Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.                  |

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## SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

SIGALD - F5879

Page 3 of 13

Further information on storage conditions : Tightly closed.  
Dry.

Storage class : 11, Combustible Solids

Recommended storage temperature : Recommended storage temperature see product label.

Further information on storage stability : Light sensitive.  
Hygroscopic.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

| Components                 | CAS-No.   | Value type<br>(Form of exposure) | Control parameters /<br>Permissible concentration | Basis     |
|----------------------------|-----------|----------------------------------|---------------------------------------------------|-----------|
| Ammonium iron(III) citrate | 1185-57-5 | TWA                              | 1 mg/m <sup>3</sup><br>(Iron)                     | ACGIH     |
|                            |           | TWA                              | 1 mg/m <sup>3</sup><br>(Iron)                     | NIOSH REL |

**Engineering measures** : No data available

### Personal protective equipment

Respiratory protection : required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: : Filter type P1

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

### Hand protection

Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0.11 mm  
Protective index : Full contact

|                    |                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer       | : KCL 741 Dermatril® L                                                                                                                                                                                                                                                                                                                                                                        |
| Material           | : Nitrile rubber                                                                                                                                                                                                                                                                                                                                                                              |
| Break through time | : 480 min                                                                                                                                                                                                                                                                                                                                                                                     |
| Glove thickness    | : 0.11 mm                                                                                                                                                                                                                                                                                                                                                                                     |
| Protective index   | : Splash contact                                                                                                                                                                                                                                                                                                                                                                              |
| Manufacturer       | : KCL 741 Dermatril® L                                                                                                                                                                                                                                                                                                                                                                        |
| Remarks            | : This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: <a href="http://www.kcl.de">www.kcl.de</a> ). |
| Eye protection     | : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).<br>Safety glasses                                                                                                                                                                                                                                             |
| Hygiene measures   | : Change contaminated clothing. Wash hands after working with substance.                                                                                                                                                                                                                                                                                                                      |

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

|                             |                                                                                       |
|-----------------------------|---------------------------------------------------------------------------------------|
| Appearance                  | : powder                                                                              |
| Color                       | : yellow, to, brown                                                                   |
| Odor                        | : No data available                                                                   |
| Odor Threshold              | : No data available                                                                   |
| pH                          | : 6.9 (73.9 °F / 23.3 °C)<br>Concentration: 1 %<br>Method: OECD Test Guideline 122    |
|                             | : Decomposition: yes<br>Method: OECD Test Guideline 102<br>Decomposes before melting. |
| Boiling point/boiling range | : No data available                                                                   |
| Flash point                 | : Not applicable                                                                      |
| Evaporation rate            | : No data available                                                                   |
| Burning rate                | : No data available                                                                   |

SIGALD - F5879

Page 5 of 13

|                                                     |                                                                                             |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------|
| Upper explosion limit /<br>Upper flammability limit | : No data available                                                                         |
| Lower explosion limit /<br>Lower flammability limit | : No data available                                                                         |
| Vapor pressure                                      | : No data available                                                                         |
| Relative vapor density                              | : No data available                                                                         |
| Relative density                                    | : No data available                                                                         |
| Density                                             | : 1.064 g/cm <sup>3</sup> (79 °F / 26 °C, 978 hPa)<br>Method: OECD Test Guideline 109       |
| Solubility(ies)<br>Water solubility                 | : 580.8 g/l (77 °F / 25 °C)<br>Method: OECD Test Guideline 105                              |
| Partition coefficient: n-<br>octanol/water          | : log Pow: -0.737 (77 °F / 25 °C)<br>Method: EPI Suite™<br>Bioaccumulation is not expected. |
| Autoignition temperature                            | : No data available                                                                         |
| Decomposition<br>temperature                        | : No data available                                                                         |
| Viscosity, dynamic                                  | : No data available                                                                         |
| Viscosity, kinematic                                | : No data available                                                                         |
| Flow time                                           | : No data available                                                                         |
| Explosive properties                                | : Not classified as explosive.                                                              |
| Oxidizing properties                                | : none                                                                                      |
| Particle characteristics<br>Particle size           | : No data available                                                                         |

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## SECTION 10. STABILITY AND REACTIVITY

|                          |                                                                                           |
|--------------------------|-------------------------------------------------------------------------------------------|
| Reactivity               | : No data available                                                                       |
| Chemical stability       | : The product is chemically stable under standard ambient conditions (room temperature) . |
| Possibility of hazardous | : Decomposes on exposure to light.                                                        |

SIGALD - F5879

Page 6 of 13

reactions

Conditions to avoid : no information available

Incompatible materials : No data available

Hazardous decomposition products : In the event of fire: see section 5

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - > 2,000 mg/kg  
(OECD Test Guideline 401)

Remarks: (ECHA)

Inhalation: No data available

LD50 Dermal - Rabbit - male and female - > 8,000 mg/kg

Remarks: (in analogy to similar products)  
(ECHA)

The value is given in analogy to the following substances: 1,2,3,4-butanetetracarboxylic acid

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

Remarks: (ECHA)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

Remarks: (ECHA)

#### Respiratory or skin sensitization

No data available

#### Germ cell mutagenicity

Test Type: Ames test

Test system: *S. typhimurium*

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Remarks: (ECHA)

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster fibroblasts

Metabolic activation: without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Remarks: (ECHA)

#### Carcinogenicity

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

SIGALD - F5879

Page 7 of 13

- NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

RTECS: GE7540000

Overdose of iron compounds may have a corrosive effect on the gastrointestinal mucosa and be followed by necrosis, perforation, and stricture formation. Several hours may elapse before symptoms that can include epigastric pain, diarrhea, vomiting, nausea, and hematemesis occur. After apparent recovery a person may experience metabolic acidosis, convulsions, and coma hours or days later. Further complications may develop leading to acute liver necrosis that can result in death due to hepatic coma., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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**SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Components:**

**Ammonium iron(III) citrate:**

Toxicity to fish : LC50 (Fish): > 100 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203  
Remarks: The value is given in analogy to the following substances:  
The value is given in analogy to the following substances: Diammonium hydrogen citrate

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
Remarks: The value is given in analogy to the following substances:  
The value is given in analogy to the following

substances: Diammonium hydrogen citrate

Toxicity to algae/aquatic plants : ErC50: > 100 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
Remarks: The value is given in analogy to the following substances:  
The value is given in analogy to the following substances: Diammonium hydrogen citrate

NOEC: > 100 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
Remarks: The value is given in analogy to the following substances:  
The value is given in analogy to the following substances: Diammonium hydrogen citrate

### **Persistence and degradability**

#### **Components:**

##### **Ammonium iron(III) citrate:**

Biodegradability : Inoculum: activated sludge  
Concentration: 100 mg/l  
Biochemical oxygen demand  
Result: Readily biodegradable.  
Biodegradation: 77 %  
Exposure time: 14 d  
Remarks: The value is given in analogy to the following substances:  
(ECHA)  
The value is given in analogy to the following substances: citric acid

### **Bioaccumulative potential**

#### **Components:**

##### **Ammonium iron(III) citrate:**

Partition coefficient: n-octanol/water : log Pow: -0.737 (77 °F / 25 °C)  
Method: EPI Suite™  
Remarks: Bioaccumulation is not expected.

### **Mobility in soil**

No data available

### **Other adverse effects**

#### **Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### IATA-DGR

Not regulated as a dangerous good

#### IMDG-Code

Not regulated as a dangerous good

#### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

### National regulation

#### 49 CFR Road

UN/ID/NA number : UN 3077  
Proper shipping name : Environmentally hazardous substance, solid, n.o.s. (Ammonium iron(III) citrate)  
Class : 9  
Packing group : III  
Labels : Class 9 - Miscellaneous dangerous substances and articles  
ERG Code : 171  
Marine pollutant : no  
  
Poison Inhalation Hazard : No

### Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety

## SECTION 15. REGULATORY INFORMATION

### CERCLA Reportable Quantity

| Components                 | CAS-No.   | Component RQ (lbs) | Calculated product RQ (lbs) |
|----------------------------|-----------|--------------------|-----------------------------|
| Ammonium iron(III) citrate | 1185-57-5 | 1000               | 1000                        |

### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : No SARA Hazards

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Ammonium iron(III) citrate      1185-57-5      >= 90 - <= 100 %

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

### US State Regulations

#### Massachusetts Right To Know

Ammonium iron(III) citrate      1185-57-5

#### Pennsylvania Right To Know

Ammonium iron(III) citrate      1185-57-5

### **Maine Chemicals of High Concern**

Product does not contain any listed chemicals

### **Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

### **Washington Chemicals of High Concern**

Product does not contain any listed chemicals

### **The ingredients of this product are reported in the following inventories:**

TSCA : All substances listed as active on the TSCA inventory

### **TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## **SECTION 16. OTHER INFORMATION**

### **Full text of other abbreviations**

|                 |   |                                                                                           |
|-----------------|---|-------------------------------------------------------------------------------------------|
| ACGIH           | : | USA. ACGIH Threshold Limit Values (TLV)                                                   |
| NIOSH REL       | : | USA. NIOSH Recommended Exposure Limits                                                    |
| ACGIH / TWA     | : | 8-hour, time-weighted average                                                             |
| NIOSH REL / TWA | : | Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek |

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent,

SIGALD - F5879

Page 12 of 13

Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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