

# Safety Data Sheet (SDS)

## Section 1: Identification

**Product identifier:** Adler's reagent

**Other name(s):**

**Item number(s):** 199, 200

**Identified use:** SU24 Scientific research and development.

**Details of the supplier of the safety data sheet:**

ES Laboratory, LLC

2041 E. Gladstone St. Unit N Glendora, CA 91740 USA

Tel: 626-208-9011

**Emergency telephone number:**

CHEMTREC® 1-800-424-9300 (US & Canada Only)

## Section 2: Hazard(s) Identification

**Hazardous classification of the substance or mixture:**

Hazard Class	Category code
Skin Corrosion	1A
Serious Eye Damage	1
Corrosive to Metal	1
Acute Toxicity - Oral	4
Specific Target Organ Toxicity – Single Exposure: Respiratory System	3
Acute Aquatic Toxicity	2

**Signal word:** Danger

**Pictogram:**



**Hazard statement(s):**

H314	Cause severe skin burn and eye damage.
H302	Harmful if swallowed.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.
H290	May be corrosive to metals.

**Precautionary statement(s):**

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing dust, fumes or mist.
P273	Avoid release to environment.
P264	Wash skin thoroughly after handling.

**Response statement(s):**

P303+P361+P353	IF ON SKIN (or hair): remove/take off immediately all contaminated clothing. Rinses 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.
P301+P330+P331+P310	IF SWALLOWED: rinse mouth. DO NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

**Storage statement(s):**

P405	Store locked up.
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**Disposal statement(s):**

P273	Avoid release to environment.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified:** No information.

**Label elements:** See tables above

**HMIS Ratings:**

Health: 3
Flammability: 0
Reactivity: 1

**NFPA Ratings:**

Health: 3
Flammability: 0
Reactivity: 1
Special hazard: None

## Section 3: Composition/Information on Ingredients

Component	CAS No.	Concentration
Hydrochloric acid	7647-01-0	60-70%
Ferric chloride, anhydrous	7705-08-0	Approx. 15%
Cupric Ammonium Chloride, dihydrate	10060-13-6	Approx. 3%

Any concentration shown as a range is to protect the confidentiality or is due to batch variation. Only hazardous components are shown.

## Section 4: First-Aid Measures

**Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical aid immediately.

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid immediately.

**Skin contact:** Wash the areas of contact with water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately.

**Ingestion:** Do not induce vomiting. Rinse mouth. Get medical aid immediately.

**Most important symptoms and effects, both acute and delayed:** No further relevant information.

**Recommendation for immediate medical care and special treatment needed, when necessary:** No further relevant information.

## Section 5: Fire-Fighting Measures

**Extinguishing media:** Product is not flammable. Use firefighting measures that suit the surrounding fire.

**Special hazards arising from the substance or mixture:** In the case of fire, the following can be released: acidic liquid and irritating fumes.

**Special protective equipment or precautions for firefighters:** Wear full protective clothing and self-contained respirator.

## Section 6: Accidental Release Measures

**Personal precautions, protective equipment, and emergency procedures:** Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation.

**Environmental precautions:** Do not allow the material to be released to the environment without proper government permits.

**Methods and materials for containment and cleaning up:** Absorb with a liquid binding material (sand, diatomite, acid binder, universal binders, sawdust).

Dispose of contaminated material as waste according to section 13. Ensure adequate ventilation.

## Section 7: Handling and Storage

**Precautions for safe handling:** Wear protective equipment. Ensure good ventilation in the workplace. Open and handle with care.

**Condition for safe storage:** Keep container tightly sealed. Store in an approved corrosive liquid storage container/area.

**Incompatibilities:** Store away from strong bases and reducing agents.

**Specific storage requirement(s):** No information.

## Section 8: Exposure Controls/Personal Protection

### Exposure Limits

Component	CAS No.	ACGIH TLV	OSHA PEL
Hydrochloric acid	7647-01-0	C 2 ppm	C 5 ppm
Ferric chloride, anhydrous	7705-08-0	1 mg/m3	1 mg/m3
Cupric Ammonium Chloride, dihydrate	10060-13-6	1 mg/m3 TWA	N/A

**Engineering controls:** Use general and/or local exhaust ventilation to control the vapor concentration.

**Eye protection:** Wear safety glasses or goggles.

**Skin protection:** Wear protective clothing and chemical resistant gloves.

**Respiratory protection:** Use self-contained respiratory device in emergency situations.

## Section 9: Physical and Chemical Properties

**Appearance:**

Brown liquid

**UFL/LEL:**

Not determined

**LFL/LEL:**

Not determined

**Odor:**

Acidic, pungent

**Vapor pressure:**

Not determined

**Odor threshold:**

Not determined

**Vapor density:**

Not determined

**pH:**

Not determined

**Relative density:**

Not determined

**Melting Point/Freezing point:**

Not determined

**Solubility in water:**

Miscible

**Boiling point/boiling range:**

Not determined

**Flash point:**

Not determined

**Evaporation Rate:**

Not determined

**Flammability (solid, gas):**

Not applicable

**Partition coefficient (n-octanol/water):**

Not determined

**Auto-ignition temperature:** Not determined  
**Decomposition temperature:** Not determined  
**Viscosity:** Not determined

**D.O.T. shipping name:** Corrosive liquid, acidic, inorganic, n.o.s. (Hydrochloric acid, Ferric chloride)

**D.O.T. hazard class:** 8

**UN number:** UN3264

**Packing group:** II

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## Section 10: Stability and Reactivity

**Reactivity:** No information.

**Chemical stability:** Stable under recommended conditions.

**Stabilizer(s):** Not required.

**Safety issues that may arise should the product change in appearance:**  
No information.

**Thermal decomposition/ conditions to Avoid:** Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions:** see incompatibilities.

**Incompatibilities:** Strong bases and reducing agents. May react with metals and generate hydrogen gas.

**Hazardous decomposition products:** May emit irritating fumes when heated to decomposition.

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## Section 11: Toxicological Information

### For Hydrochloric Acid:

**Acute toxicity:**

Oral rat LD50: 900 mg/kg.

**Other exposure effect:**

Inhalation: Strong corrosive effect.

On the Skin: Strong corrosive effect.

On the Eye: Strong corrosive effect.

Sensitization: No sensitizing effects were known.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from NTP or OSHA. IARC-3 Not classifiable as to human carcinogenicity.

### For Ferric Chloride, Anhydrous:

**Acute toxicity:**

Oral rat LD50: 450mg/kg.

**Other exposure effect:**

Inhalation: No data available.

On the Skin: Cause skin irritation.

On the Eye: Cause serious eye damage

Sensitization: No sensitizing effects were known.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from NTP, IARC or OSHA.

### For Cupric Ammonium Chloride, dihydrate

**Acute toxicity:**

No information.

**Other exposure effect:**

Oral: No information.

Inhalation: May cause irritation.

On the Skin: No information.

On the Eye: No information.

Sensitization: No information.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from NTP, IARC, ACGIH or OSHA.

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## Section 12: Ecological Information

This product contains ferric chloride which is toxic to the aquatic organism.

**Toxicity:**

**Aquatic toxicity:** Ferric chloride is toxic to aquatic organisms.

**Persistence and degradability:** Ferric chloride may cause long lasting harmful effects to aquatic life.

**Behavior in environmental system:**

**Bioaccumulative potential:** No information.

**Mobility in soil:** No information.

**Additional ecological information:** No information.

**Other adverse effects:** No information.

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## Section 13: Disposal Considerations

Place in a chemical waste container for proper disposal in an approved waste disposal facility. Dispose of the content and container in accordance with local, regional, national, international regulations.

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## Section 14: Transport Information

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## Section 15: Regulatory Information

**Not meant to be all inclusive, selected regulation represented**

**OSHA status:** No information.

**TSCA status:** All components are listed.

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## Section 16: Other Information

**Disclaimer:** The information above is believed to be accurate and represents the best information currently available to us. ES Laboratory, LLC makes no warranty, express or implied, as to its accuracy, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. We shall not be liable for any damages to person or property resulting from its use.

**Revised Date:** 1/4/2019