



## Material Safety Data Sheet

Ferrozine reagent in thioglycolic acid

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### 1. Product Identification

**Synonyms:** CA-6 Analyzer Iron Reagent

**CAS No.:** Not applicable to mixtures.

**Molecular Weight:** Not applicable to mixtures.

**Chemical Formula:** Not applicable to mixtures.

**Product Codes:** ECD P/N 2010035-1

**Manufacture By:** Electro-Chemical Devices, Inc.  
1681 Kettering  
Irvine, CA 92614

**Phone:** (800) 729-1333

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### 2. Hazards Identification

#### Emergency Overview

#### OSHA Hazards

Highly toxic by inhalation, Toxic by ingestion, Toxic by skin absorption, Corrosive

#### Other hazards which do not result in classification

Vesicant, Stench, Rapidly absorbed through skin.

#### GHS Classification

Acute toxicity, Oral (Category 3)

Acute toxicity, Inhalation (Category 1)

Acute toxicity, Dermal (Category 3)

Skin corrosion (Category 1B)

Serious eye damage (Category 1)

Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements



# ELECTRO-CHEMICAL DEVICES

Liquid Analytical Instrumentation for Process Control

Bringing Simplicity  
to a Solution



## Pictogram

Signal word **Danger**

## Hazard statement(s)

**H301 + H311** Toxic if swallowed or in contact with skin

**H314** Causes severe skin burns and eye damage.

**H330** Fatal if inhaled.

**H402** Harmful to aquatic life.

## Precautionary statement(s)

**P260** Do not breathe dust/ fumes/ gas/ mist/ vapors/ spray.

**P280** Wear protective gloves/ protective clothing/ eye protection/ face protection.

**P284** Wear respiratory protection

**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.



## NFPA Rating

## Potential Health Effects

**Inhalation** May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

**Skin** Toxic if absorbed through skin. Causes skin burns.

**Eyes** Causes eye burns.

**Ingestion** Toxic if swallowed.



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### 3. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
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Ferrozine <sup>®</sup>	28048-33-1	0.4 % w/v	Yes
Ammonium Thioglycolate	5421-46-5	8-10 %	Yes
Thioglycolic acid	68-11-1	18-20 %	Yes
Water	7732-18-5	Balance	No

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### 4. First Aid Measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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### 5. Fire Fighting Measures

**Flammability of the Product:** Non-flammable

**Auto-ignition Temperature:** Not applicable

**Flash Points:** Not applicable

**Flammable Limits:** Not applicable



**Products of Combustion:** Hazardous decomposition products formed under fire conditions. - Sulfur oxides, Carbon oxides

**Fire Hazards:** Not applicable

**Explosion Hazards:** Static Discharge: None

**Mechanical Impact:** None

**Fire Fighting Media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Protective Clothing:** Wear self-contained breathing apparatus for firefighting if necessary

**Special Remarks:** None

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## 6. Accidental Release Measures

### Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

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## 7. Handling and Storage

### Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

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## 8. Exposure Controls/Personal Protection

Components	CAS No.	Value	Control Parameters	Basis
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Thioglycolic Acid, Mercaptoacetic Acid	66-11-1	TWA	1 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Eye irritation Skin irritation Danger of cutaneous absorption			
		TWA	1 ppm 4 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential for dermal absorption			
		TWA	1 ppm 4 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants -1910.1000
	Skin notation			

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Full Contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

#### Splash contact

Material: Nature latex/chloroprene

Minimum layer thickness: 0.6 mm

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Break through time: 235 min

#### Eye protection

Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).



## Skin and body protection

Choose impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

## Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

## 9. Physical and Chemical Properties

### Appearance:

Form liquid

Color no data available

### Odor:

Unpleasant, rotten eggs

### Solubility:

Complete (100%)

### Specific Gravity:

1.05 – 1.15 g/ml, water = 1

### pH:

Acidic, pH 1-3

### % Volatiles by volume @ 21C (70F):

NA

### Boiling Point:

98°-100°C

### Melting Point:

-10°C

### Vapor Density (Air=1):

3.18

### Vapor Pressure (mm Hg):

0.5 hPa (0.4 mmHg) at 25 °C (77 °F)

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## 10. Stability and Reactivity



**Chemical Stability:** Stable under recommended storage conditions.

**Conditions to Avoid:** none

**Incompatibilities with Other Materials:** Strong oxidizing agents, Strong acids

**Hazardous Decomposition Products:**

Hazardous decomposition products formed under fire conditions. - Sulphur oxides. Other decomposition products - no data available. Hazardous decomposition products formed under fire conditions. – Nature of decomposition products not known.

**Hazardous Polymerization:** Has not been reported

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## 11. Toxicological Information

### Acute toxicity

#### Oral LD50

LD50 Oral - rat - 114 mg/kg

#### Inhalation LC50

LC50 Inhalation - rat - 4 h - 21 mg/m<sup>3</sup>

#### Dermal LD50

LD50 Dermal - rabbit - 848 mg/kg

**Other information on acute toxicity** no data available

**Skin corrosion/irritation** no data available

**Serious eye damage/eye irritation** no data available

**Respiratory or skin sensitization** no data available

**Germ cell mutagenicity** no data available

### CARCINOGENIC EFFECTS:

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

ACGIH: No component of this product is present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product is 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 is present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.



**Reproductive toxicity:** no data available

**Toxicity to Reproductive System:** Not available

**Teratogenic Effects:** Not available

**Specific target organ toxicity - single exposure (Globally Harmonized System)** no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)** no data available

**Mutagenic Effects:** Not available

**Potential health effects:**

**Inhalation** May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

**Ingestion** Toxic if swallowed.

**Skin** Toxic if absorbed through skin. Causes skin burns.

**Eyes** Causes eye burns.

## Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin, Cough, Shortness of breath, Headache, Nausea

Synergistic effects

no data available

Additional Information

RTECS: AI5950000

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## 12. Ecological Information

### Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 30 mg/l - 96 h

### Persistence and degradability

No data available

### Bioaccumulative potential

No data available

### Mobility in soil

No data available





## PBT and vPvB assessment

No data available

## Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

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## 13. Disposal Considerations

### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging:** Dispose of as unused product.

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## 14. Transport Information

### DOT (US)

**UN number:** 1940      **Class:** 8      **Packing group:** II

Proper shipping name: Thioglycolic acid

Marine pollutant: No

Poison Inhalation Hazard: No

### IMDG

**UN number:** 1940      **Class:** 8      **Packing group:** II      **EMS-No:** F-A, S-B

Proper shipping name: THIOGLYCOLIC ACID

Marine pollutant: No

### IATA

**UN number:** 1940      **Class:** 8      **Packing group:** III

Proper shipping name: THIOGLYCOLIC ACID

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## 15. Regulatory Information

### OSHA Hazards



Highly toxic by inhalation, Toxic by ingestion, Toxic by skin absorption, Corrosive

## SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

## SARA 313 Components

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.

## SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right to Know Components

Mercaptoacetic acid:	CAS-No.	Revision Date
	68-11-1	1993-04-24

Pennsylvania Right To Know Components

Mercaptoacetic acid:	CAS-No.	Revision Date
	68-11-1	1993-04-24

New Jersey Right To Know Components

Mercaptoacetic acid:	CAS-No.	Revision Date
	68-11-1	1993-04-24

**California Prop. 65 Components** This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. Other Information

### Label Hazard Warning:

As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

### Label Precautions:

None.

### Label First Aid:

Not applicable.



# ELECTRO-CHEMICAL DEVICES

*Liquid Analytical Instrumentation for Process Control*

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to a Solution*

**Product Use:**

Laboratory Reagent.

**Revision Information:**

MSDS-2010035-1 rev. a June. 2013

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