

Date of issue: 24 January 2005.

1 - Identification of the product and of the company**Product name:**

- Fe-0 Iron Reagent.

Application:

- Determination of iron in water samples.

Manufacturer identification:

Milwaukee Electronics Kft.
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CENTRO ANTIVELENI
OSPEDALE NIGUARDA (MI) - ITALY

2 - Composition/information on ingredients*Hazardous Ingredients:*

NAME <i>(EC directives)</i>	EC-Index-No.	CAS No.	LABELLING <i>(EC directives)</i>	CONTENT
Ammonium thioglycolate	NA 5421-46-5		T, Xn R 25-43	≥ 40 - < 60%
Thioglycolic acid	607-090-00-6	68-11-1	T, C R 23/24/25-34	≥ 0.2 - < 2.0%
1,10-phenanthroline monohydrate	613-092-00-8	5144-89-8	T, N R25-50/53	≥ 0.01 - < 0.25%

(full text of R phrases in section 16).

3 - Hazard identification

Harmful by inhalation and in contact with skin. Toxic if swallowed. May cause sensitization by skin contact.

4 - First aid measures

Remove contaminated, soaked clothing immediately and dispose of safely.

- **After inhalation** : fresh air. Consult doctor if feeling unwell.
- **After skin contact** : wash off with plenty of water. Remove contaminated clothing.
- **After eye contact** : rinse out with plenty of water. If pain persists, summon medical advice.
- **After swallowing** : drink plenty of water, induce vomiting. Obtain medical attention.

5 - Fire-fighting measures

- **Suitable extinguishing media:**
 - Foam, powder, dry sand.

Health & Safety data sheet

According to EC Directive 91/155/EC and following amendments

- **Special risks:**
 - Development of hazardous combustion gases or vapors possible in the event of fire.
 - The following may develop in event of fire: sulfur oxides, nitrogen oxides.
- **Special protective equipment for fire fighting:**
 - Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.
- **Additional information:**
 - Contain escaping vapors with water.
 - Prevent fire-fighting water from entering surface water or groundwater.

6 - Accidental release measures

- **Personal precautions:**
 - Work under hood. Do not inhale substance. Avoid generation of vapours/aerosols.
- **Environmental precautions:**
 - Do not discharge into the drains/surface waters/groundwater.
- **Additional notes:**
 - Take up dry. Clean up affected area and dispose according to local regulation.

7 - Handling and storage

- | | |
|---|--|
| <ul style="list-style-type: none"> • Handling: <ul style="list-style-type: none"> - Avoid generation of vapors/aerosols. - Do not inhale substance. - Accessible only for authorized persons. | <ul style="list-style-type: none"> • Storage: <ul style="list-style-type: none"> - Store at room temperature (+15 to +25 °C). - Tightly closed in a dry and well-ventilated place. - Keep away from sources of heat. |
|---|--|

8 - Exposure control/personal protection

- **Personal protective equipment:**
 - Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.
- **Respiratory protection:**
 - Required when vapors/aerosols are generated.
 - Work under hood.
- **Protective gloves:**
 - Rubber or plastic
- **Eye protection:**
 - Goggles or face mask
- **Industrial hygiene:**
 - Immediately change contaminated clothing. Apply skin-protective barrier cream. Wash hands and face after working with substance. Under no circumstances eat or drink at workplace. Work under hood. Do not inhale substance.

9 - Physical/chemical properties

- | | |
|---|------------------------------------|
| • Appearance : colorless liquid | • pH at 20°C : 5.6 |
| • Odor : characteristic | • Density at 20°C : ND |
| • Solubility in water : soluble | • Ignition temperature : NA |
| • Melting point : NA (decomposition) | • Flash point : NA |
| • Boiling point : NA | • Explosion limits : NA |

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10 - Stability and reactivity

- **Conditions to be avoided:**
 - Heating (risk of decomposition).
- **Hazardous decomposition products:**
 - In the event of fire: see section 5.
- **Substances to be avoided:**
 - strong acids, strong oxidizing agents, heavy metals, strong bases (Release of: ammonia).

11 - Toxicological information

Quantitative data on the toxicity of this product are not available.

APPLICABLE TO MAIN COMPONENT(S):

- The following applies to Ammonium thioglycolate, as the pure substance:

Acute toxicity

LD₅₀ (dermal, rat): >2000 mg/kg.

LD₅₀ (oral, rat): 71 mg/kg.

Specific symptoms in animal studies:

Eye irritation test (rabbit): Slight irritations (OECD 405).

Skin irritation test (rabbit): Slight irritations (OECD 404).

Subacute to chronic toxicity

Sensitization:

Sensitization test (guinea pig): Sensitizer.

Further toxicological information

After inhalation of vapours: slight mucosal irritations.

After skin contact: Slight irritations. Risk of skin sensitization. Danger of skin absorption.

Possible damages: dermatitis.

After eye contact: Slight irritations.

After swallowing: Nausea, vomiting.

- The following applies to Thioglycolic acid, as the pure substance:

Acute toxicity

LC₅₀ (inhalation, rat): 0.21 mg/l /4 h (anhydrous substance).

LD₅₀ (oral, rat): 73 mg/kg (anhydrous substance).

Subacute to chronic toxicity

Applicable to the toxicologically determinant component:

Sensitization:

Sensitization test (guinea pig): negative.

Non carcinogenic in animal experiments.

Bacterial mutagenicity: Salmonella typhimurium: negative.

Bacterial mutagenicity: Escherichia coli: negative.

Bacterial mutagenicity: Ames test: negative.

No indication of teratogenic properties.

No impairment of reproductive performance suspected.

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Further toxicological information

After inhalation: When vapours/aerosols are generated: mucosal irritations, coughing, dyspnoea.

After skin contact: burns, Danger of skin absorption.

After eye contact: Burns. Risk of blindness!

After swallowing: burns in mouth, throat, oesophagus and gastrointestinal tract.

Other notes: Sensitization possible in predisposed persons.

Property of this product must be anticipated on the basis from the components of the preparation:

- **In case of inhalation** : irritations. Other possible symptoms are: coughing, dyspnoea.
- **In case of skin contact** : irritations. Risk of skin sensitization. Danger of skin absorption.
- **In case of eye contact** : irritations.
- **In case of ingestion** : nausea, vomiting.
- **Further data** : further hazardous properties cannot be excluded. The product should be handled with the care usual when dealing with chemicals.

12 - Ecological information

Quantitative data on the toxicity of this product are not available.

APPLICABLE TO MAIN COMPONENT(S):

- The following applies to Ammonium thioglycolate, as the pure substance:

Behavior in environmental compartments:

Distribution: log p(o/w): -3.88 (calculated).

No bioaccumulation is to be expected (log P(o/w) <1).

Ecotoxic effects:

Biological effects:

Harmful effect on aquatic organisms. Hazard for drinking water supplies.

Fish toxicity: *L.idus* LC₅₀: 880 mg/l /28 d (calculated on the free acid).

Daphnia toxicity: *Daphnia magna* EC₅₀: 38 mg/l /48 h (calculated on the free acid).

Bacterial toxicity: *Ps.putida* EC₁₀: 7.5 mg/l /16 h (50% solution).

Further ecologic data:

The following applies to ammonium ions in general: biological effects: fish: toxic as from 0.3 mg/l; nourishment for fish: toxic as from 0.3 mg/l.

- The following applies to Thioglycolic acid, as the pure substance:

Biologic degradation:

Biodegradation: 70 % /28 d (anhydrous substance).

Biodegradable.

Behavior in environmental compartments:

Distribution: log p(o/w): 0.059 (23 °C) (anhydrous substance).

No bioaccumulation is to be expected (log P(o/w) <1).

Ecotoxic effects:

Biological effects:

Harmful effect on aquatic organisms. Toxic effect on fish and algae. Hazard for drinking water supplies. Concentration in organisms is not to be expected.

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Fish toxicity:

L.idus LC₅₀: 103 mg/l (anhydrous substance).P.promelas LC₅₀: 30 mg/l /96 h (anhydrous substance).

Bacterial toxicity:

Photobacterium phosphoreum EC₁₀: 225 mg/l (anhydrous substance).*Further ecologic data:*

TOD: 1.22 g/g (anhydrous substance).

BOD 8 % from TOD /5 d (anhydrous substance).

13 - Disposal considerations• **Waste disposal:**

- Chemical residues are generally classified as special waste and thus covered by local regulations. Contact local authorities or disposal companies for advice.
- Handle contaminated packaging in the same way as the substance itself.

14 - Transport information

- | | | |
|-------------------------|-----------|------------------|
| • Land transport | ADR/RID | : 9, PGII |
| | UN-No. : | UN3316 |
| | Name | : CHEMICAL KIT |
| • Sea transport | IMDG | : 9/UN3316/PG II |
| | Name | : CHEMICAL KIT |
| • Air transport | ICAO/IATA | : 9/UN3316/PG II |
| | Name | : CHEMICAL KIT |

These transport data apply to the COMPLETE KIT!

15 - Regulatory information**Labeling according to EC Directives:**

Symbol: T		Toxic
R-phrases:	20/21-25-43	Harmful by inhalation and in contact with skin. Toxic if swallowed. May cause sensitization by skin contact.
S-phrases:	24-37-45	Avoid contact with skin. Wear suitable gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Contains: Ammonium thioglycolate
Thioglycolic acid

16 - Other information

• **Text of any R phrases referred to under heading 2:**

- | | |
|----------|--|
| 23/24/25 | : Toxic by inhalation, in contact with skin and if swallowed. |
| 25 | : Toxic if swallowed. |
| 34 | : Causes burns. |
| 43 | : May cause sensitization by skin contact. |
| 50/53 | : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |

• **Supersedes edition of** : / (1st edition).

• **Legend** : NA Not applicable
ND Not determined

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.