

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 s.r.l.  
c.so Leonardo da Vinci 48/50  
21013 Gallarate (VA), Italy  
tel.: +39 0331 268009

### Emergency Telephone n. °:

+39-02-66101029  
CENTRO ANTIVELENI  
OSPEDALE NIGUARDA (MI) - ITALY

## 2 - Composition/information on ingredients

### Hazardous Ingredients:

<b>NAME</b> (EC directives)	<b>EC-Index-No.</b>	<b>CAS No.</b>	<b>LABELLING</b> (EC directives)	<b>CONTENT</b>
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.

- **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.

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### 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.

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### 7 - Handling and storage

- **Handling:**
  - Avoid generation of vapors/aerosols.
  - Do not inhale substance.
  - Accessible only for authorized persons.
- **Storage:**
  - Store at room temperature (+15 to +25 °C).
  - Tightly closed in a dry and well-ventilated place.
  - Keep away from sources of heat.

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### 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.

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### 9 - Physical/chemical properties

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

#### 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*

LD<sub>50</sub> (dermal, rat): >2000 mg/kg.

LD<sub>50</sub> (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*

LC<sub>50</sub> (inhalation, rat): 0.21 mg/l /4 h (anhydrous substance).

LD<sub>50</sub> (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.

### Health & Safety data sheet

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

#### *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.

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## 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* LC<sub>50</sub>: 880 mg/l /28 d (calculated on the free acid).

Daphnia toxicity: *Daphnia magna* EC<sub>50</sub>: 38 mg/l /48 h (calculated on the free acid).

Bacterial toxicity: *Ps.putida* EC<sub>10</sub>: 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.

## Health &amp; Safety data sheet

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

Fish toxicity:

L.idus LC<sub>50</sub>: 103 mg/l (anhydrous substance).P.promelas LC<sub>50</sub>: 30 mg/l /96 h (anhydrous substance).

Bacterial toxicity:

Photobacterium phosphoreum EC<sub>10</sub>: 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**

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

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**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** : / (1<sup>st</sup> edition).

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

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*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.*