SECTION 1: Identification

Other means of identification

Trade name: Reagent FE1
Synonym: *for iron*

Article number: *CAY840-V10AAE*

Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

Application of the substance / the mixture *Laboratory chemicals*

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Endress+Hauser
Conducta GmbH+Co. KG
Dieselstraße 24
D-70839 Gerlingen

Further information obtainable from:
Phone: +49 (0)7156 209-10117
E-Mail: MSDS.PCC@endress.com

Regional representation:
Endress+Hauser Australia Pty Ltd
16 Giffnock Avenue
Macquarie Park, NSW 2113
Australia

Phone: 1300 363 707
Phone: +61 2 8877 7000

Emergency telephone number: *Poison Hotline: 13 11 26*

*
SECTION 2: Hazard(s) Identification

Classification of the substance or mixture

skull and crossbones

Acute toxicity - oral – Category 3	*H301 Toxic if swallowed.*
Acute toxicity - inhalation – Category 1	*H330 Fatal if inhaled.*

health hazard

Respiratory sensitisation – Category 1	*H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.*
Specific target organ toxicity (repeated exposure) – Category 2	*H373 May cause damage to organs through prolonged or repeated exposure.*

corrosion

Skin corrosion/irritation – Category 1B	*H314 Causes severe skin burns and eye damage.*
Eye damage/irritation – Category 1	*H318 Causes serious eye damage.*

Acute toxicity - dermal – Category 4	*H312 Harmful in contact with skin.*

(Contd. on page 2)

(Contd. of page 1)

Skin sensitisation – Category 1 *H317 May cause an allergic skin reaction.*

Label elements
GHS label elements
The product is classified and labelled according to the Globally Harmonised System (GHS).
Hazard pictograms

GHS05 GHS06 GHS08

Signal word *Danger*

Hazard-determining components of labelling:
ammonium thioglycolate (10-20 %)
thioglycolic acid (10-20 %)
Hazard statements
Toxic if swallowed.
Harmful in contact with skin.
Fatal if inhaled.
Causes severe skin burns and eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause damage to organs through prolonged or repeated exposure.
Precautionary statements
IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment is urgent (see on this label).
Take off contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
Results of PBT and vPvB assessment
PBT: *Not applicable.*
vPvB: *Not applicable.*

*
SECTION 3: Composition and Information on Ingredients

Mixtures
Description: *Mixture of substances listed below with nonhazardous additions.*

(Contd. on page 3)

(Contd. of page 2)

Dangerous components:		
CAS: 5421-46-5 *EINECS: 226-540-9*	*ammonium thioglycolate* *Acute toxicity - oral – Category 3, H301; Acute toxicity - dermal – Category 3, H311; Acute toxicity - inhalation – Category 1, H330; Respiratory sensitisation – Category 1, H334; Specific target organ toxicity (repeated exposure) – Category 2, H373; Corrosive to metals – Category 1, H290; Skin corrosion/irritation – Category 2, H315; Eye damage/irritation – Category 2A, H319; Skin sensitisation – Category 1, H317*	*10-20%*
CAS: 68-11-1 *EINECS: 200-677-4*	*thioglycolic acid* *Acute toxicity - oral – Category 3, H301; Acute toxicity - inhalation – Category 1, H330; Specific target organ toxicity (repeated exposure) – Category 2, H373; Skin corrosion/irritation – Category 1B, H314; Acute toxicity - dermal – Category 4, H312; Skin sensitisation – Category 1, H317*	*10-20%*

Additional information: *For the wording of the listed hazard phrases refer to section 16.*

*
SECTION 4: First Aid Measures

Description of first aid measures

General information:
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Remove breathing equipment only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation:
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.

After skin contact:
Immediately wash with water and soap and rinse thoroughly.
Immediately rinse with water.

After eye contact: *Rinse opened eye for several minutes under running water. Then consult a doctor.*

After swallowing:
Do not induce vomiting; call for medical help immediately.
Drink plenty of water and provide fresh air. Call for a doctor immediately.
Most important symptoms and effects, both acute and delayed
No further relevant information available.

Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Fire Fighting Measures

Extinguishing media
Suitable extinguishing agents:
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
For safety reasons unsuitable extinguishing agents: *no further information*
Special hazards arising from the substance or mixture
During heating or in case of fire poisonous gases are produced.
Advice for firefighters *No further relevant information available.*
Protective equipment: *Mount respiratory protective device.*

(Contd. on page 4)

(Contd. of page 3)

SECTION 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
Wear protective clothing.
Environmental precautions:
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralising agent.
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

* SECTION 7: Handling and Storage

Precautions for safe handling
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
Information about fire - and explosion protection: *Keep respiratory protective device available.*

Conditions for safe storage, including any incompatibilities

Storage:
Requirements to be met by storerooms and receptacles: *No special requirements.*
Information about storage in one common storage facility: *Not required.*
Further information about storage conditions: *Keep container tightly sealed.*
Storage class: *6.1 B*
Specific end use(s) *No further relevant information available.*

* SECTION 8: Exposure controls and personal protection

Control parameters

Ingredients with limit values that require monitoring at the workplace:	
CAS: 68-11-1 thioglycolic acid	
WES (Australia)	*Long-term value: 3.8 mg/m³, 1 ppm* *Sk*

Additional information: *The lists valid during the making were used as basis.*

Exposure controls
Appropriate engineering controls *No further data; see section 7.*
Individual protection measures, such as personal protective equipment

General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.

(Contd. on page 5)

(Contd. of page 4)

Respiratory protection:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Hand protection

Protective gloves

To avoid skin problems reduce the wearing of gloves to the required minimum.
Only use chemical-protective gloves with CE-labelling of category III.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Material of gloves
Nitrile rubber, NBR
Natural rubber, NR
Chloroprene rubber, CR
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye/face protection

Tightly sealed goggles

Body protection: *Protective work clothing*

SECTION 9: Physical and Chemical Properties

Information on basic physical and chemical properties

General Information	
Physical state	*Fluid*
Colour:	*Yellow*
Odour:	*Characteristic*
Odour threshold:	*Not determined.*
Melting point/freezing point:	*Undetermined.*
Boiling point or initial boiling point and boiling range	*100 °C*
Flammability	*Not applicable.*
Lower and upper explosion limit	
Lower:	*Not determined.*
Upper:	*Not determined.*
Flash point:	*Not applicable.*
Decomposition temperature:	*Not determined.*
pH at 20 °C	*3.5*
Viscosity:	
Kinematic viscosity	*Not determined.*
Dynamic:	*Not determined.*
Solubility	
water:	*Fully miscible.*
Partition coefficient n-octanol/water (log value)	*Not determined.*
Vapour pressure at 20 °C:	*23 hPa*

(Contd. on page 6)

(Contd. of page 5)

Density and/or relative density	
Density at 20 °C:	*1.093 g/cm³*
Relative density	*Not determined.*
Vapour density	*Not determined.*
Particle characteristics	*Not applicable.*
Other information	
Appearance:	
Form:	*Fluid*
Important information on protection of health and environment, and on safety.	
Ignition temperature:	*Product is not selfigniting.*
Explosive properties:	*Product does not present an explosion hazard.* *Not determined.*
Solvent content:	
Water:	*64.5 %*
Solids content:	*0.0 %*
Change in condition	
Evaporation rate	*Not determined.*
Information with regard to physical hazard classes	
Explosives	*Void*
Flammable gases	*Void*
Aerosols	*Void*
Oxidising gases	*Void*
Gases under pressure	*Void*
Flammable liquids	*Void*
Flammable solids	*Void*
Self-reactive substances and mixtures	*Void*
Pyrophoric liquids	*Void*
Pyrophoric solids	*Void*
Self-heating substances and mixtures	*Void*
Substances and mixtures, which emit flammable gases in contact with water	*Void*
Oxidising liquids	*Void*
Oxidising solids	*Void*
Organic peroxides	*Void*
Corrosive to metals	*Void*
Desensitised explosives	*Void*

SECTION 10: Stability and Reactivity

Reactivity *No further relevant information available.*
Chemical stability
Thermal decomposition / conditions to be avoided:
No decomposition if used according to specifications.
Possibility of hazardous reactions *No dangerous reactions known.*
Conditions to avoid *No further relevant information available.*
Incompatible materials: *No further relevant information available.*
Hazardous decomposition products: *No dangerous decomposition products known.*

SECTION 11: Toxicological Information

Information on hazard classes as defined in Regulation (EC) No 1272/2008
Acute toxicity
Toxic if swallowed.
Harmful in contact with skin.
Fatal if inhaled.

(Contd. on page 7)

(Contd. of page 6)

Skin corrosion/irritation *Causes severe skin burns and eye damage.*
Serious eye damage/irritation *Causes serious eye damage.*
Respiratory or skin sensitisation
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
STOT-repeated exposure *May cause damage to organs through prolonged or repeated exposure.*
Information on other hazards

Endocrine disrupting properties
None of the ingredients is listed.

*
SECTION 12: Ecological Information

Toxicity
Aquatic toxicity: *No further relevant information available.*
Persistence and degradability *No further relevant information available.*
Bioaccumulative potential *No further relevant information available.*
Mobility in soil *No further relevant information available.*
Results of PBT and vPvB assessment
PBT: *Not applicable.*
vPvB: *Not applicable.*
Endocrine disrupting properties
The product does not contain substances with endocrine disrupting properties.
Other adverse effects
Additional ecological information:
General notes:
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Danger to drinking water if even extremely small quantities leak into the ground.

SECTION 13: Disposal considerations

Waste treatment methods
Recommendation
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Uncleaned packaging:
Recommendation: *Disposal must be made according to official regulations.*
Recommended cleansing agents: *Water, if necessary together with cleansing agents.*

*
SECTION 14: Transport information

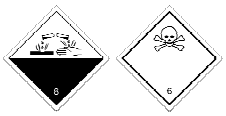
UN number or ID number
IMDG, IATA *UN2922*
UN proper shipping name
ADG *UN2922 CORROSIVE LIQUID, TOXIC, N.O.S. (ammonium thioglycolate, THIOGLYCOLIC ACID)*
IMDG *CORROSIVE LIQUID, TOXIC, N.O.S. (ammonium thioglycolate, THIOGLYCOLIC ACID)*
IATA *Corrosive liquid, toxic, n.o.s. (ammonium thioglycolate/ THIOGLYCOLIC ACID solution)*

(Contd. on page 8)

(Contd. of page 7)

Transport hazard class(es)

ADG



Class	*8 (CT1) Corrosive substances.*
Label	*8+6.1*

IMDG

Class	*8 Corrosive substances.*
Label	*8/6.1*

IATA

Class	*8 Corrosive substances.*
Label	*8 (6.1)*
Packing group	
ADG, IMDG, IATA	*II*
Environmental hazards:	*Not applicable.*
Special precautions for user	*Warning: Corrosive substances.*
Hazard identification number (Kemler code):	*86*
EMS Number:	*F-A,S-B*
Segregation groups	*(SGG1) Acids*
Stowage Category	*B*
Stowage Code	*SW2 Clear of living quarters.*
Maritime transport in bulk according to IMO instruments	*Not applicable.*

Transport/Additional information:

ADG	
Limited quantities (LQ)	*1L*
Transport category	*2*
Tunnel restriction code	*E*

IMDG	
Limited quantities (LQ)	*1L*
Excepted quantities (EQ)	*Code: E2* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 500 ml*
UN "Model Regulation":	*UN 2922 CORROSIVE LIQUID, TOXIC, N.O.S. (AMMONIUM THIOGLYCOLATE, THIOGLYCOLIC ACID), 8 (6.1), II*

*
SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Inventory of Industrial Chemicals	
CAS: 7732-18-5	*water*
CAS: 5421-46-5	*ammonium thioglycolate*

(Contd. on page 9)

(Contd. of page 8)

CAS: 68-11-1	*thioglycolic acid*

Standard for the Uniform Scheduling of Medicines and Poisons		
CAS: 68-11-1	*thioglycolic acid*	*S5, S6*

Australia: Priority Existing Chemicals
None of the ingredients is listed.

GHS label elements
The product is classified and labelled according to the Globally Harmonised System (GHS).
Hazard pictograms

GHS05 GHS06 GHS08

Signal word *Danger*

Hazard-determining components of labelling:
ammonium thioglycolate (10-20 %)
thioglycolic acid (10-20 %)
Hazard statements
Toxic if swallowed.
Harmful in contact with skin.
Fatal if inhaled.
Causes severe skin burns and eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause damage to organs through prolonged or repeated exposure.
Precautionary statements
IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment is urgent (see on this label).
Take off contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Directive 2012/18/EU
Named dangerous substances - ANNEX I *None of the ingredients is listed.*

National regulations:

Waterhazard class: *Water hazard class 3 (Self-assessment): extremely hazardous for water.*
Chemical safety assessment: *A Chemical Safety Assessment has not been carried out.*

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing SDS: *PCC-TWR*
Contact: *MSDS.pcc@endress.com*
Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances

(Contd. on page 10)

(Contd. of page 9)

CAS: Chemical Abstracts Service (division of the American Chemical Society)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Corrosive to metals – Category 1: Corrosive to metals – Category 1
Acute toxicity - oral – Category 3: Acute toxicity – Category 3
Acute toxicity - dermal – Category 4: Acute toxicity – Category 4
Acute toxicity - inhalation – Category 1: Acute toxicity – Category 1
Skin corrosion/irritation – Category 1B: Skin corrosion/irritation – Category 1B
Skin corrosion/irritation – Category 2: Skin corrosion/irritation – Category 2
Eye damage/irritation – Category 1: Serious eye damage/eye irritation – Category 1
Eye damage/irritation – Category 2A: Serious eye damage/eye irritation – Category 2A
Respiratory sensitisation – Category 1: Respiratory sensitisation – Category 1
Skin sensitisation – Category 1: Skin sensitisation – Category 1
Specific target organ toxicity (repeated exposure) – Category 2: Specific target organ toxicity (repeated exposure) – Category 2
*** Data compared to the previous version altered.**