

Safety Data Sheet

according to Regulation (EC) No 1907/2006

2301-66 FerroZine Iron Reagent

Revision date: 05.05.2022

Product code: 230166

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Creation date: 18.05.2005

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

2301-66 FerroZine Iron Reagent

UFI: MMC1-2ATQ-P003-Y9WV

1.2. Relevant identified uses of the substance or mixture and uses advised against**Use of the substance/mixture**

Water analysis

1.3. Details of the supplier of the safety data sheet

Company name: HACH LANGE GmbH
Street: Willstätterstr. 11
Place: D-40549 Düsseldorf
Telephone: +49 (0)211 5288-383
e-mail: SDS@hach.com
Internet: www.de.hach.com
Responsible Department: HACH LANGE Ltd.
5, Pacific Way
Salford Manchester M50 1DL - United Kingdom
Tel. +44 (0) 161 872 1487 * Fax +44 (0) 161 848 7324
e-Mail: info-uk@hach.com

HACH LANGE Ltd.
Unit 1, Chestnut Road Western Industrial Estate
IRL-Dublin 12
Tel. +353 (0)1 4602522
e-Mail: info-ie@hach.com

1.4. Emergency telephone number:

Poison Control Center Mainz: Tel: +49 (0) 6131 19240 - 24 hour emergency service -

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

Hazard categories:

Acute toxicity: Acute Tox. 3

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Corr. 1B

Serious eye damage/eye irritation: Eye Dam. 1

Respiratory or skin sensitisation: Skin Sens. 1

Respiratory or skin sensitisation: Resp. Sens. 1B

Hazardous to the aquatic environment: Aquatic Chronic 3

Hazard Statements:

Toxic if swallowed.

Harmful if inhaled.

Causes severe skin burns and eye damage.

Causes serious eye damage.

May cause an allergic skin reaction.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Harmful to aquatic life with long lasting effects.

2.2. Label elements**Regulation (EC) No. 1272/2008**

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Hazard components for labelling

Ammonium thioglycolate
thioglycolic acid**Signal word:** Danger**Pictograms:**

Hazard statements

H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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/doctor.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Additional advice on labelling

The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008.

2.3. Other hazards

no data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

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Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	CLP Classification			
5421-46-5	Ammonium thioglycolate			35,0-45,0 %
	226-540-9			
	Skin Irrit. 2, Eye Irrit. 2, Resp. Sens. 1B, Skin Sens. 1, Aquatic Chronic 3; H315 H319 H334 H317 H412			
7732-18-5	Water			25,0-35,0 %
	231-791-2			
68-11-1	thioglycolic acid			25,0-35,0 %
	200-677-4	607-090-00-6		
	Acute Tox. 3, Acute Tox. 3, Acute Tox. 3, Skin Corr. 1B; H331 H311 H301 H314			
69898-45-9	Ferrozine			<1 %

Full text of H and EUH statements: see section 16.

SECTION 4: First aid measures
4.1. Description of first aid measures
General information

Take off contaminated clothing and shoes immediately.
Show this safety data sheet to the doctor in attendance.

After inhalation

Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion.
Consult a physician for severe cases.

After contact with skin

Wash off immediately with plenty of water.
Take off all contaminated clothing immediately.
Call a physician immediately.

After contact with eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Call a physician immediately.

After ingestion

Clean mouth with water and drink afterwards plenty of water. Call a physician immediately.
Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, Shortness of breath

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures
5.1. Extinguishing media

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Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2. Special hazards arising from the substance or mixtureFire may liberate hazardous vapours. The following may develop in event of fire: sulfur oxides., Carbon monoxide, Carbon dioxide (CO₂)**5.3. Advice for firefighters**

In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit.

Additional information

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up or vacuum up spillage and collect in suitable container for disposal.

6.4. Reference to other sections

13. Disposal considerations

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

Avoid contact with skin and eyes.

Advice on protection against fire and explosion

See also section 5

Further information on handling

Avoid contact with skin, eyes and clothing.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep container tightly closed in a dry and well-ventilated place.

Hints on joint storage

Incompatible with acids.

7.3. Specific end use(s)

Reagent for analysis

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
68-11-1	Mercaptoacetic acid	1	3.8		TWA (8 h)	WEL

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Additional advice on limit values

None known.

8.2. Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice.

Protective and hygiene measures

The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Wash hands before breaks and at the end of workday.

Eye/face protection

Safety glasses with side-shields

Hand protection

Use barrier skin cream.

Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374. In full contact:

Gloves material: Viton, Layer thickness: 0.70 mm, Breakthrough time: >480 min. In splash contact: Glove

material: nitrile rubber, Layer thickness 0,20 mm, Breakthrough time: > 30 min

Skin protection

Avoid contact with skin, eyes and clothing.

Respiratory protection

In the case of dust or aerosol formation use respirator with an approved filter.

Recommended Filter type: ABEK-filter

Environmental exposure controls

Do not flush into surface water or sanitary sewer system.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid
Colour:	yellow
Odour:	strong, unpleasant
pH-Value (at 20 °C):	3,5

Changes in the physical state

Melting point:	not applicable
Initial boiling point and boiling range:	no data available
Sublimation point:	not applicable
Softening point:	not applicable
Pour point:	no data available
:	no data available
Flash point:	not applicable

Flammability

Solid:	no data available
Gas:	no data available

Explosive properties

not applicable

Lower explosion limits:	not applicable
Upper explosion limits:	not applicable
Ignition temperature:	no data available

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Auto-ignition temperature

Solid: no data available
Gas: no data available

Decomposition temperature: no data available

Oxidizing properties

not applicable

Vapour pressure: no data available

Vapour pressure: no data available

Density (at 20 °C): 1,310 g/cm³

Bulk density: no data available

Water solubility:
(at 20 °C) miscible**Solubility in other solvents**

miscible

Partition coefficient: no data available

Viscosity / dynamic: no data available

Viscosity / kinematic: no data available

Flow time: no data available

Vapour density: no data available

Evaporation rate: no data available

Solvent separation test: no data available

Solvent content: no data available

9.2. Other information

Solid content: no data available

no data available

SECTION 10: Stability and reactivity**10.1. Reactivity**

Reactivity Hazard: Oxidizing agents

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Reacts with the following substances: Oxidizing agents, Strong acids

10.4. Conditions to avoid

Extremes of temperature and direct sunlight.

10.5. Incompatible materials

Strong acids and oxidizing agents

10.6. Hazardous decomposition products

To avoid thermal decomposition, do not overheat. Heating can release hazardous gases.

Ammonia, Sulphur oxides

SECTION 11: Toxicological information**11.1. Information on toxicological effects**

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Acute toxicity

 Toxic if swallowed.
 Harmful if inhaled.

ATEmix calculated

ATE (oral) 247,0 mg/kg; ATE (inhalation vapour) 10,15 mg/l; ATE (inhalation aerosol) 1,691 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
5421-46-5	Ammonium thioglycolate				
	dermal	LD50 7900 mg/kg	rabbit		
68-11-1	thioglycolic acid				
	oral	LD50 73 mg/kg	rat	RTECS	
	dermal	LD50 848 mg/kg	rat		
	inhalation vapour	ATE 3 mg/l			
	inhalation aerosol	ATE 0,5 mg/l			

Irritation and corrosivity

 Causes severe skin burns and eye damage.
 Causes serious eye damage.

Sensitising effects

 May cause an allergic skin reaction. (Ammonium thioglycolate)
 May cause allergy or asthma symptoms or breathing difficulties if inhaled. (Ammonium thioglycolate)

Carcinogenic/mutagenic/toxic effects for reproduction

 Based on available data, the classification criteria are not met.
 Contains no ingredient listed as a carcinogen

STOT-single exposure

 Based on available data, the classification criteria are not met.
 The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure

 Based on available data, the classification criteria are not met.
 The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

 Based on available data, the classification criteria are not met.
 No aspiration toxicity classification

Specific effects in experiment on an animal

No toxicology information is available.

Additional information on tests

None known.

Practical experience
Other observations

None known.

Further information

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information
12.1. Toxicity

No data is available on the product itself.

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12.2. Persistence and degradability

No data is available on the product itself.

12.3. Bioaccumulative potential

no data available

12.4. Mobility in soil

no data available

12.5. Results of PBT and vPvB assessment

no data available

12.6. Other adverse effects

Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

In accordance with local and national regulations.

List of Wastes Code - residues/unused products

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

List of Wastes Code - used product

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

List of Wastes Code - contaminated packaging

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:

UN 2922

14.2. UN proper shipping name:

CORROSIVE LIQUID, TOXIC, N.O.S. (Thioglycolic acid/ammonium thioglycolate)

14.3. Transport hazard class(es):

8

14.4. Packing group:

II

Hazard label:

8+6.1



Classification code:

CT1

Special Provisions:

274

Limited quantity:

1 L

Excepted quantity:

E2

Transport category:

2

Hazard No:

86

Tunnel restriction code:

E

Other applicable information (land transport)

Excepted Quantities: E2

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Inland waterways transport (ADN)**Other applicable information (inland waterways transport)**

Not tested



Marine transport (IMDG)

14.1. UN number:	UN 2922
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (Thioglycolic acid/ammonium thioglycolate solution)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+6.1
	 
Marine pollutant:	-
Special Provisions:	274
Limited quantity:	1 L
EmS:	F-A, S-B

Other applicable information (marine transport)

Excepted Quantities: E2

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	UN 2922
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (Thioglycolic acid/ammonium thioglycolate solution)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+6.1
	 
Special Provisions:	A3 A803
Limited quantity Passenger:	0.5 L
IATA-packing instructions - Passenger:	851
IATA-max. quantity - Passenger:	1 L
IATA-packing instructions - Cargo:	855
IATA-max. quantity - Cargo:	30 L

Other applicable information (air transport)

Excepted Quantities: E2

Passenger-LQ: Y840

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Use personal protective equipment.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

Other applicable information

Additional Information: This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper

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Shipping Name: Chemical Kit, Hazard Class: 9, UN Number 3316, Package group II, EMS Code: F-A, S-P
These transport data apply to the entire pack

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3

Information according to 2012/18/EU (SEVESO III):

Not subject to 2012/18/EU (SEVESO III)

National regulatory information

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D):

2 - obviously hazardous to water

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Changes

Revision: 05.05.2022

Safety datasheet sections which have been updated: 11, 15

Revision: 24.01.2020

Safety datasheet sections which have been updated: 7, 15

Revision: 7.05.2018

Safety datasheet sections which have been updated: 2, 11

Revision: 21.03.2016

Safety datasheet sections which have been updated: 14

Revision: 27.04.2015

Safety datasheet sections which have been updated: 2

Revision: 08.05.2013

Revision: 18.06.2014 (Safety datasheet sections which have been updated: 8)

Revision: 13.10.2014 (Safety datasheet sections which have been updated: 4)

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
Acute Tox. 3; H301	Calculation method
Acute Tox. 4; H332	Calculation method
Skin Corr. 1B; H314	Calculation method
Eye Dam. 1; H318	Calculation method
Skin Sens. 1; H317	Calculation method
Resp. Sens. 1B; H334	Calculation method
Aquatic Chronic 3; H412	Calculation method

Relevant H and EUH statements (number and full text)

H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.

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H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H412	Harmful to aquatic life with long lasting effects.

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)