

Safety data sheet

according to Regulation (EC) No 1907/2006 (REACH)

Printing date 02.02.2017

Version number 3

Revision: 31.01.2017

* SECTION 1: Identification of the substance/mixture and of the company/ undertaking

• 1.1 Product identifier

- Trade name: L 4660
- Article number: 285138381
- Description: Redox test solution (+600 mV+640 mV)
- Product code: scho0036

• 1.2 Relevant identified uses of the substance or mixture and uses advised against:

- Product category: PC21 Laboratory chemicals
- Process category: PROC15 Use as laboratory reagent
- Application of the substance / the preparation: Test solution

• 1.3 Details of the supplier of the safety data sheet

- Manufacturer/Supplier:

Xylem Analytics Germany GmbH
Dr.-Karl-Slevogt-Str. 1
82362 Weilheim
Germany

Contact: SI Analytics, Mainz
Tel. +49.(0)6131.66.5111

- Further information obtainable from: E-Mail: msds.si@xyleminc.com

- **1.4 Emergency telephone number:** Chemtrec: (USA & Canada) 800-424-9300 (International) 001 703-527-3887

SECTION 2: Hazards identification

• 2.1 Classification of the substance or mixture

- Classification according to Regulation (EC) No 1272/2008:



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

• 2.2 Label elements:

- 2.2.1 Labelling according to Regulation (EC) No 1272/2008:

The product is classified and labelled according to the CLP regulation.

- Hazard pictograms: GHS07

- Signal word: Warning

- Hazard statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

- Precautionary statements:

P280 Wear protective gloves / eye protection / face protection.

P264 Wash thoroughly after handling.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see on this label).

P332+P313 If skin irritation occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P302+P352 IF ON SKIN: Wash with plenty of water.

(Contd. on page 2)

EU

Safety data sheet

according to Regulation (EC) No 1907/2006 (REACH)

Printing date 02.02.2017

Version number 3

Revision: 31.01.2017

Trade name: L 4660

(Contd. of page 1)

- P362+P364 Take off contaminated clothing and wash it before reuse.
 • **2.3 Other hazards** No further relevant information available.

SECTION 3: Composition/information on ingredients

- **3.2 Mixture**
- Description:
Mixture, consisting of the following components:
Water, sulfuric acid, ammonium-ironsulfate compounds

- Dangerous components:

CAS: 7664-93-9	sulphuric acid	⚠ Skin Corr. 1A, H314	10-<15%
EINECS: 231-639-5			
Index number: 016-020-00-8			

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

* SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- After inhalation:
Take affected persons into fresh air and keep quiet.
Seek medical treatment in case of complaints.
- After skin contact:
Immediately rinse with water.
Take off contaminated clothing.
If skin irritation or rash occurs: Get medical advice/attention.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing:
Make victim drink water immediately (2 glasses at most).
Do not induce vomiting (risk of perforation)
Call a doctor immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**
Coughing
Nausea
Vomiting
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- Suitable extinguishing agents: The product is not flammable. Extinguishing agent to suit environment.
- **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Sulphur oxides (SO_x)
Nitrogen oxides (NO_x)
- **5.3 Advice for firefighters**
- Protective equipment: Wear self-contained respiratory protective device.
- Additional information
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Avoid contact with skin and eyes.
Wear personal protective equipment (see section 8).
Ensure adequate ventilation
- **6.2 Environmental precautions:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

(Contd. on page 3)

Safety data sheet

according to Regulation (EC) No 1907/2006 (REACH)

Printing date 02.02.2017

Version number 3

Revision: 31.01.2017

Trade name: L 4660

(Contd. of page 2)

- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **6.4 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

- **7.1 Precautions for safe handling** Open and handle receptacle with care.
- Information about fire - and explosion protection: No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
Requirements to be met by storerooms and receptacles: Provide acid-resistant floor.
Information about storage in one common storage facility: Do not store together with alkalis (caustic solutions).
Further information about storage conditions: Store receptacle in a well ventilated area.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.

8.1 Control parameters

- Ingredients with limit values that require monitoring at the workplace:

7664-93-9 sulphuric acid

IOELV | Long-term value: 0,05 mg/m³

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

8.2 Exposure controls

- Personal protective equipment:
- General protective and hygienic measures:
Avoid contact with the eyes and skin.
Do not inhale gases / fumes / aerosols.
Take off contaminated clothing and wash it before reuse.
Wash hands before breaks and at the end of work.
- Respiratory protection:
Only required when fog or aerosols are generated or when the workplace is not sufficiently ventilated.
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.
- Protection of hands:
Protective gloves
Protective gloves recommended for frequent or long-term skin contact.
- Material of gloves
Recommended thickness of the material: $\geq 0,35$ mm
Nitrile rubber, NBR
- Eye protection: Tightly sealed goggles
- Body protection: Acid resistant protective clothing

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- General Information
- Appearance:

Form:	Fluid
Colour:	Light yellow
- Odour: Odourless

(Contd. on page 4)

Safety data sheet

according to Regulation (EC) No 1907/2006 (REACH)

Printing date 02.02.2017

Version number 3

Revision: 31.01.2017

Trade name: L 4660

(Contd. of page 3)

• pH-value:	-0,2
• Change in condition	
Melting point/freezing point:	ca. -4,8 °C
Initial boiling point and boiling range:	102 °C
• Flash point:	Not applicable.
• Auto-ignition temperature:	Product is not selfigniting.
• Explosive properties:	Product does not present an explosion hazard.
• Vapour pressure at 20 °C:	23 hPa
• Density at 20 °C:	1,15 g/cm ³
• Solubility in / Miscibility with water:	Fully miscible.
• Viscosity:	
Dynamic:	Not determined.
Kinematic at 20 °C:	1 mm ² /s
• 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** Exotherm reaction with bases.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** In case of fire, see section 5.

* SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- Acute toxicity Based on available data, the classification criteria are not met.

• LD/LC50 values relevant for classification:

7664-93-9 sulphuric acid

Oral	LD50	2140 mg/kg (Rat) (RTECS)
Inhalative	LC50	510 mg/m ³ , 2 h (Rat) (RTECS)

- Primary irritant effect:
- Skin corrosion/irritation
Causes skin irritation.
- Serious eye damage/irritation
Causes serious eye irritation.
- Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
- Germ cell mutagenicity Based on available data, the classification criteria are not met.
- Carcinogenicity Based on available data, the classification criteria are not met.
- Reproductive toxicity Based on available data, the classification criteria are not met.
- STOT-single exposure Based on available data, the classification criteria are not met.
- STOT-repeated exposure Based on available data, the classification criteria are not met.
- Aspiration hazard Based on available data, the classification criteria are not met.

(Contd. on page 5)

Safety data sheet

according to Regulation (EC) No 1907/2006 (REACH)

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Revision: 31.01.2017

Trade name: L 4660

(Contd. of page 4)

* SECTION 12: Ecological information

• 12.1 Toxicity

• Aquatic toxicity:

7664-93-9 sulphuric acid

EC50 29 mg/l, 24 h (Daphnia magna)

LC50 16-29 mg/l, 96 h (Lepomis macrochirus)

• **12.2 Persistence and degradability** No further relevant information available.

• **12.3 Bioaccumulative potential** No further relevant information available.

• **12.4 Mobility in soil** No further relevant information available.

• Additional ecological information:

• General notes:

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Detrimental effect due to shift of pH value.

• **12.5 Results of PBT and vPvB assessment** Not applicable.

• **12.6 Other adverse effects** No further relevant information available.

* SECTION 13: Disposal considerations

• 13.1 Waste treatment methods

• Recommendation

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

Disposal must comply with the relevant local regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose the special waste.

• Uncleaned packaging:

• Recommendation: Empty ampoules can be treated like household refuse.

SECTION 14: Transport information

• 14.1 UN-Number

• ADR/RID, IMDG, IATA UN3264

• 14.2 UN proper shipping name

• ADR/RID

3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
(SULPHURIC ACID, Ammonium Eisen(II)-sulfat-Hexahydrat)

• IMDG, IATA

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
(SULPHURIC ACID, sulfuric acid, ammonium iron(2+) salt (2:2:1), hexahydrate)

• 14.3 Transport hazard class(es)

• ADR/RID, IMDG, IATA



• Class

8 Corrosive substances.

• Label

8

• 14.4 Packing group

• ADR/RID, IMDG, IATA

III

• 14.5 Environmental hazards:

• Marine pollutant:

No

• 14.6 Special precautions for user

Warning: Corrosive substances.

(Contd. on page 6)

Safety data sheet

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(Contd. of page 5)

• Danger code (Kemler):	80
• EMS Number:	F-A,S-B
• Segregation groups	Acids
• Stowage Category	A
• Stowage Code	SW2 Clear of living quarters.
• 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	
	Not applicable.
<hr/>	
• ADR/RID	
• Limited quantities (LQ)	5 L
• Transport category	3
• Tunnel restriction code	E
<hr/>	
• UN "Model Regulation":	UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (SULPHURIC ACID, AMMONIUMEISEN(II)-SULFAT-HEXAHYDRAT), 8, III

* SECTION 15: Regulatory information

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

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I None of the ingredients is listed.
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

- Relevant phrases
H314 Causes severe skin burns and eye damage.
- 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)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
ADR: Accord européen sur le transport 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
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
- * Data compared to the previous version altered.