

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 31.01.2023

Version number 6 (replaces version 5)

Revision: 31.01.2023

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@xylem.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:**



GHS05 corrosion

Met. Corr.1 H290 May be corrosive to metals.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

2.2 Label elements:

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

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

- **Hazard pictograms:** GHS05

- **Signal word:** Warning

- **Hazard statements:**

H290 May be corrosive to metals.

H315 Causes skin irritation.

(Contd. on page 2)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 31.01.2023

Version number 6 (replaces version 5)

Revision: 31.01.2023

Trade name: L 4660

(Contd. of page 1)

H319 Causes serious eye irritation.

· **Precautionary statements:**

P234 Keep only in original packaging.

P280 Wear protective gloves / eye protection / face protection.

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

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

P390 Absorb spillage to prevent material damage.

· **Additional information:**

Product contains: Reportable explosives precursors. Making available, introduction, possession and use according to Regulation (EU) 2019/1148, Article 9.

· **2.3 Other hazards** No further relevant information available.

SECTION 3: Composition/information on ingredients


· **3.2 Mixtures**

· **Description:**

Mixture, consisting of the following components:

Water, sulfuric acid, ammonium-ironsulfate compounds

· **Dangerous components:**

CAS: 7664-93-9	sulphuric acid	10-<15%
EINECS: 231-639-5	 Skin Corr. 1A, H314	
Index number: 016-020-00-8	Specific concentration limits: Skin Corr. 1A; H314: C ≥ 15 %	
	Skin Irrit. 2; H315: 5 % ≤ C < 15 % Eye Irrit. 2; H319: 5 % ≤ C < 15 %	

· **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:**

If skin irritation or rash occurs: Get medical advice/attention.

Wash with plenty of water.

Take off contaminated clothing.

· **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).

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.

Use fire extinguishing methods suitable to surrounding conditions.

(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 31.01.2023

Version number 6 (replaces version 5)

Revision: 31.01.2023

Trade name: L 4660

(Contd. of page 2)

· 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.

Ensure adequate ventilation

Wear personal protective equipment (see section 8).

· 6.2 Environmental precautions:

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

· 6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Wash off residuals with water.

Ensure adequate ventilation.

· 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

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Wear personal protective equipment (see section 8)

- **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:** Not required.

- **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

· 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

- **Appropriate engineering controls** No further data; see item 7.

- **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.

(Contd. on page 4)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 31.01.2023

Version number 6 (replaces version 5)

Revision: 31.01.2023

Trade name: L 4660

(Contd. of page 3)

Wash hands before breaks and at the end of work.

· Individual protection measures, such as 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.

· Hand protection Protective gloves

· Material of gloves

- Recommended thickness of the material: ≥ 0.35 mm
- Nitrile rubber, NBR

· For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:

- Nitrile rubber, NBR

· Eye/face protection Tightly sealed goggles

· Body protection: Acid resistant protective clothing

· Environmental exposure controls

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.

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Physical state	Fluid
· Colour:	Light yellow
· Odour:	Odourless
· Odour threshold:	Not determined.
· Melting point/freezing point:	4.8 °C
· Boiling point or initial boiling point and boiling range	102 °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	-0.2
· Viscosity:	
· Kinematic viscosity at 20 °C	1 mm ² /s
· Dynamic:	Not determined.
· Solubility	
· water:	Fully miscible.
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure at 20 °C:	23 hPa
· Density and/or relative density	
· Density at 20 °C:	1.15 g/cm ³
	Not determined.

(Contd. on page 5)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 31.01.2023

Version number 6 (replaces version 5)

Revision: 31.01.2023

Trade name: L 4660

(Contd. of page 4)

· Relative density	Not determined.
· Vapour density	Not determined.
· 9.2 Other information	
· Appearance:	
· Form:	Fluid
· Important information on protection of health and environment, and on safety.	
· Auto-ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· 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	May be corrosive to metals.
· Desensitised explosives	Void

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 hazard classes as defined in Regulation (EC) No 1272/2008
 - Acute toxicity
 - No quantitative toxicity data are available for this product.
 - 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)

(Contd. on page 6)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 31.01.2023

Version number 6 (replaces version 5)

Revision: 31.01.2023

Trade name: L 4660

(Contd. of page 5)

Inhalative	LC50	510 mg/m ³ , 2 h (Rat) (RTECS)
------------	------	---

- **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.
- **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.

11.2 Information on other hazards

· Endocrine disrupting properties

None of the ingredients is listed.

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.
- **12.5 Results of PBT and vPvB assessment** Not applicable.
- **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**

· 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.

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

· Additional ecological information:

· General notes:

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

Detrimental effect due to shift of pH value.

· Additional ecological information:

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

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.

(Contd. on page 7)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 31.01.2023

Version number 6 (replaces version 5)


Revision: 31.01.2023

Trade name: L 4660

(Contd. of page 6)

- **Uncleaned packaging:**
- **Recommendation:**
Empty ampoules can be treated like household refuse.
Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.
Packagings that may not be cleansed are to be disposed of in the same manner as the product.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· 14.1 UN number or ID number	
· ADR/RID, IMDG, IATA	UN3264
· 14.2 UN proper shipping name	
· ADR/RID	3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (SULPHURIC ACID, Ammoniumeisen(II)-sulfat-Hexahydrat)
· IMDG, IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (sulphuric acid)
· 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.
· Hazard identification number (Kemler code):	80
· EMS Number:	F-A,S-B
· Segregation groups	(SGG1) Acids
· Stowage Category	A
· Stowage Code	SW2 Clear of living quarters.
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.
· ADR/RID	
· Limited quantities (LQ)	5 L
· Transport category	3
· Tunnel restriction code	E
· UN "Model Regulation":	UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (SULPHURIC ACID, AMMONIUMEISEN(II)-SULFAT-HEXAHYDRAT), 8, III

EU

(Contd. on page 8)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 31.01.2023

Version number 6 (replaces version 5)

Revision: 31.01.2023

Trade name: L 4660

(Contd. of page 7)

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

· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

7664-93-9 sulphuric acid

3

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

7664-93-9 sulphuric acid

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.

· **Date of previous version:** 06.04.2022

· **Version number of previous version:** 5

· 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 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

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

Met. Corr.1: Corrosive to metals – Category 1

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.**