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SAFETY DATA SHEET

according to Regulation (EU) No. 453/2010

Redox Buffer Solution 468 mV/pH 0.1

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product code 51319058, 51319057

Synonyms None.

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

Use of the Substance/Preparation Laboratory chemicals

1.3. Details of the supplier of the safety data sheet

Company/Undertaking Identification

Mettler-Toledo AG
Process Analytics
Im Hackacker 15
CH-8902 Urdorf
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1.4. Emergency telephone number +1-800-535 50 53 (Info Trac, 24 hrs)

Revision Date 27.05.2013

Version 6

2. Hazards identification

Causes severe skin burns and eye damage

2.1. Classification of the substance or mixture

NFPA Ratings (Scale 0-4):
HEALTH=3
FLAMMABILITY=0
REACTIVITY=1
SPECIAL=ACID
HMIS Ratings (Scale: 0=Minimal 1=Slight 2=Moderate
3=Serious 4=Severe):
HEALTH=3
FLAMMABILITY=0
REACTIVITY=1
PROT. EQUIPMENT=C (Safety Glasses, Gloves, Protective apron)

Classification according to Regulation (EC) No. 1272/2008 (GHS/CLP)	Serious eye damage/eye irritation, Cat. 2, H319 Skin corrosion/irritation, Cat. 1A, H314
Additional information	For the full text of the phrases mentioned in this Section, see Section 16.

2.2. Label elements

Signal Word	Danger
Hazard Statements	H314: Causes severe skin burns and eye damage.
Precautionary statements	P260: Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P280: Wear protective gloves/ protective clothing/ eye protection/ face protection. P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303+P361+P353: IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. 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 or doctor/ physician.
Additional advice	None.
GHS product identifier	Sulphuric acid, CAS-No. 7664-93-9

2.3. Other hazards

No information available.

3. Composition/information on ingredients

Chemical characterization Buffer solution.

Components		GHS Classification		CAS	REACH No.
Sulphuric acid	5% - 10%	Skin Corr. 1A H314 [Skin Corr. 1A H314: C ≥ 15 % ¦ Skin Irrit. 2 H315: 5 % ≤ C < 15 % ¦ Eye Irrit. 2 H319: 5 % ≤ C < 15 %]		7664-93-9	

For the full text of the phrases mentioned in this Section, see Section 16.

Hazardous impurities None known.

4. First aid measures

4.1. Description of first aid measures

Inhalation Move to fresh air in case of accidental inhalation of vapours or decomposition products. Call a physician or Poison Control Center immediately.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Immediate medical treatment necessary as untreated skin corrosions are slow and bad healing wounds.

Eye contact Rinse immediately with plenty of water, also under the eyelids. Consult an ophthalmologist.

Ingestion Rinse mouth. Drink 1 or 2 glasses of water. If swallowed, seek medical advice immediately and show this container or label.

4.2. Most important symptoms and effects, both acute and delayed None known.

4.3. Indication of any immediate medical attention and special treatment needed None known.

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Use dry chemical, CO2, water spray or alcohol foam.
Extinguishing media which must not be used for safety reasons	None.
5.2. Special hazards arising from the substance or mixture	The product is not flammable. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds.

5.3. Advice for firefighters

Special protective equipment for firefighters	Standard procedure for chemical fires. In the event of fire, wear self contained breathing apparatus. Wear protective suit.
Specific methods	Water mist may be used to cool closed containers.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel	Ensure adequate ventilation. Use personal protective equipment. Sweep up to prevent slipping hazard. Avoid contact with skin and eyes. Do not breathe vapours/dust.
Advice for emergency responders	Handle in accordance with good industrial hygiene and safety practice.
6.2. Environmental precautions	Do not flush into surface water or sanitary sewer system.
6.3. Methods and material for containment and cleaning up	Neutralize with chalk, alkali solution or ammonia. Soak up with inert absorbent material. Keep in suitable and closed containers for disposal.
6.4. Reference to other sections	See chapter 8 and 13.

7. Handling and storage

7.1. Precautions for safe handling	Wear personal protective equipment. Avoid contact with skin and eyes. Practice care and caution to avoid skin contact and inhalation of vapours or mists if generated.
7.2. Conditions for safe storage, including any incompatibilities	Store at room temperature in the original container. Keep container tightly closed in a cool, well-ventilated place. Store in a place

accessible by authorized persons only.

7.3. Specific end use(s) No information available.

8. Exposure controls/personal protection

8.1. Control parameters

Exposure limit(s) No data is available on the product itself.

Sulfuric acid (CAS 7664-93-9)

U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)	1 mg/m3 TWA
U.S. - OSHA - Vacated PELs - TWAs	1 mg/m3 TWA

8.2. Exposure controls

Occupational exposure controls Avoid contact with skin, eyes and clothing.

Personal protection equipment

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Respirator with combination filter for vapour/particulate.

Hand protection The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it. Gloves made of VITON. Nitrile rubber. Break through time: > 8 h.

Eye protection Safety glasses with side-shields conforming to EN 166.

Skin and body protection Long sleeved clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Thermal hazards No special measures required.

Environmental exposure controls Prevent product from entering surface water or sewage.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form Liquid.
Colour Yellowish.
Odour None.
Odour Threshold No information available.

pH: 0.1
Melting point/range: No information available.

Boiling point/range:	No information available.
Flash point:	No information available.
Evaporation Rate:	No information available.
Flammability:	No information available.
Explosion limits:	No information available.
Vapour pressure:	No information available.
Vapor density:	No information available.
Relative density:	No information available.
Water solubility:	completely miscible
Partition coefficient (n-octanol/water):	No information available.
Autoignition temperature:	No information available.
Decomposition temperature:	No information available.
Viscosity:	No information available.
Combustion/explosion hazards:	not hazardous
Oxidizing properties:	None

9.2. Other information

10. Stability and reactivity

10.1. Reactivity	No information available.
10.2. Chemical stability	Stable at normal conditions.
10.3. Possibility of hazardous reactions	Heating can release hazardous gases.
10.4. Conditions to avoid	Direct heating, dirt, chemical contamination, sunlight, UV or ionizing radiation.
10.5. Incompatible materials	Metals. Alkaline metals. Strong acids and strong bases. Halogenated compounds. Ammonia.
10.6. Hazardous decomposition products	Sulphur oxides.

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity	No data is available on the product itself. **Sulfuric acid (CAS 7664-93-9)** Inhalation LC50 Mouse 320 mg/m3 2 h Inhalation LC50 Rat 347 ppm 1 h Inhalation LC50 Rat 510 mg/m3 2 h Oral LD50 Rat 2140 mg/kg
Skin corrosion/irritation	Corrosive.

Serious eye damage/eye irritation	Corrosive. Risk of serious damage to eyes.
Respiratory / Skin Sensitisation	No data available.
Carcinogenicity	No data available.
Germ cell mutagenicity	No data available.
Reproductive toxicity	No data available.
Specific target organ toxicity (single exposure)	No data available.
Specific target organ toxicity (repeated exposure)	No data available.
Aspiration hazard	No data available.
Human experience	No data available.
Information on likely routes of exposure	dermal
Symptoms related to the physical, chemical and toxicological characteristics	The product causes burns of eyes, skin and mucous membranes.

12. Ecological information

12.1. Toxicity	No data is available on the product itself. May change pH of waters.
Sulfuric acid (CAS 7664-93-9)	
Ecotoxicity - Freshwater Fish - Acute Toxicity Data	96 h LC50 Brachydanio rerio: >500 mg/L [static]
Ecotoxicity - Water Flea - Acute Toxicity Data	24 h EC50 Daphnia magna: 29 mg/L
12.2. Persistence and degradability	No data available.
12.3. Bioaccumulative potential	No data available.
12.4. Mobility in soil	No data available.
12.5. Results of PBT and vPvB assessment	No information available.
12.6. Other adverse effects	No information available.

13. Disposal considerations

13.1. Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of as unused product.

14. Transport information

ADR/RID	Proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulphuric acid) UN No 3264. Class 8. Packing group III. ADR/RID-Labels 8. Classification code C1. Risk No. 80. Limited quantity 5 L. Tunnel code E
IMO	Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (Sulphuric acid) UN No 3264. Class 8. Packing group III. ADR/RID-Labels 8. Limited quantity 5 L. EmS F-A, S-B. Marine Pollutant no
ICAO	Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (Sulphuric acid) UN No 3264. Class 8. Packing group III. Packing instruction (passenger aircraft): 852 (5 L). Packing instruction (LQ): Y841 (1 L). Packing instruction (cargo aircraft): 856 (60 L).
Inland navigation ADN	Proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulphuric acid) UN No 3264. Class 8. Packing group III. ADN danger 8+(N1, N2, N3, CMR, F oder S).
Further Information	None.

15. Regulatory information

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

Regulatory Information

NFPA Ratings (Scale 0-4):
HEALTH=3
FLAMMABILITY=0
REACTIVITY=1
SPECIAL=ACID
HMIS Ratings (Scale: 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe):
HEALTH=3
FLAMMABILITY=0
REACTIVITY=1
PROT. EQUIPMENT=C (Safety Glasses, Gloves, Protective apron)

The product is classified and labelled according to Regulation (EC) No. 1272/2008 (GHS/CLP).

15.2. Chemical safety assessment

Not required.

16. Other information

Key or legend to abbreviations and acronyms

None.

Key literature references and sources for data

Information taken from reference works and the literature.

Classification procedure

Calculation method.

Full text of phrases referred to under sections 2 and 3

H314: Causes severe skin burns and eye damage.
H319: Causes serious eye irritation.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release. It is not to be considered a warranty or quality specification.