# Safety data sheet
## according to 1907/2006/EC, Article 31

Printing date 28.03.2017 Version number 3 Revision: 28.03.2017

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

· **1.1 Product identifier**

· **Product name: KS415 - HP1 - Hydrogen Peroxide Buffer**

· **Catalog number:** 56Z041598, 56L041565, 56U041565

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

· **Application of the substance / the preparation:** Reagent for water analysis

· **1.3 Details of the supplier of the safety data sheet**

· **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

· **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
· **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de

· **1.4 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790
Languages: English and German

## 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.
Skin Corr. 1A H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

· **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** Danger
· **Hazard-determining components of labelling:**
sulphuric acid
· **Hazard statements**
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
· **Precautionary statements**
P260 Do not breathe mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

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P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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.
P308 IF exposed or concerned:
P310 Immediately call a POISON CENTER/doctor.

· **2.3 Other hazards** Acid burns have to treated immediately, as it may otherwise cause badly curing wounds.
· **Results of PBT and vPvB assessment**
This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

## SECTION 3: Composition/information on ingredients

· **3.2 Mixtures**
· **Description:** sulfuric acid solution

· **Dangerous components:**

| | | | |
|---|---|---|---|
| CAS: 7664-93-9<br>EINECS: 231-639-5<br>Index No: 016-020-00-8<br>Reg.nr.: 01-2119458838-20-XXXX | sulphuric acid | Met. Corr.1, H290; Skin Corr. 1A, H314 | 60-70% |

· **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**
· **General information** Instantly remove any clothing soiled by the product.
· **After inhalation**
Supply fresh air.
Call a doctor immediately.
· **After skin contact**
Instantly wash with polyethylene glycol 400.
Instantly rinse with water.
Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.
· **After eye contact**
Rinse opened eye for several minutes (at least 15 min) under running water.
Call a doctor immediately.
· **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
Do not induce vomiting; instantly call for medical help.
· **4.2 Most important symptoms and effects, both acute and delayed:**
strong caustic effect.
after inhalation:
coughing
breathing difficulty
damage to the affected mucous membranes
after swallowing:
sickness
vomiting
diarrhoea
pain
· **Danger**
Danger of system failure.
Danger of gastric perforation.
Danger of pulmonary oedema.
· **4.3 Indication of any immediate medical attention and special treatment needed:**
If swallowed or in case of vomiting, danger of entering the lungs
Subsequent observation for pneumonia and pulmonary oedema


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## SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents** $CO_2$, sand, extinguishing powder.
· **For safety reasons unsuitable extinguishing agents**
Water.
--> exothermic reaction
· **5.2 Special hazards arising from the substance or mixture**
The product is not combustible.
Formation of toxic gases is possible during heating or in case of fire.
Sulphur oxides (SOx)
· **5.3 Advice for firefighters**
· **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
· **Additional information**
Collect contaminated fire fighting water separately. It must not enter drains.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

## SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
· **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Avoid substance contact.
Ensure adequate ventilation
Use breathing protection against the effects of fumes/dust/aerosol.
· **Advice for emergency responders:** Protective equipment: see section 8
· **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.
· **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Use neutralising agent.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Dispose of contaminated material as waste according to item 13.
· **6.4 Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

## SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
· **Advice on safe handling:**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Hygiene measures:**
Do not inhale gases / fumes / aerosols.
Do not get in eyes, on skin, or on clothing.
Take off immediately all contaminated clothing.
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke when using this product.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and containers:** Store in cool location.
· **Information about storage in one common storage facility:**
Store away from metals.
Do not store together with alkalis (caustic solutions).
Store away from flammable substances.
· **Further information about storage conditions:**
Store in cool, dry conditions in well sealed containers.
Protect from heat and direct sunlight.
Protect from the effects of light.

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Protect from humidity and keep away from water.
This product is hygroscopic.
· **Recommended storage temperature:** 20 °C +/- 5 °C
· **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **CAS: 7664-93-9 sulphuric acid** | |
| WEL (Great Britain) | Long-term value: 0.05* mg/m³<br>*mist: defined as thoracic fraction |
| IOELV (European Union) | Long-term value: 0.05 mg/m³ |
| OEL (Sweden) | Short-term value: 0.2 mg/m³<br>Long-term value: 0.1 mg/m³<br>C, V |

· **Regulatory information**
WEL (Great Britain): EH40/2011
IOELV (European Union): 91/322/EEC, 2000/39/EC, 2006/15/EC
OEL (Sweden): AFS2015:7
· **Additional information:** IOELV = Indicative Occupational Exposure Limit

· **DNELs**
Derived No Effect Level (DNEL)

| **CAS: 7664-93-9 sulphuric acid** | | |
|---|---|---|
| Inhalative | DNEL | 0.1 mg/m³ (Worker / acute / local effects) |
| | | 0.05 mg/m³ (Worker / acute / systemic effects) |

· **Recommended monitoring procedures:**
Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

· **PNECs**
Predicted No Effect Concentration (PNEC)

| **CAS: 7664-93-9 sulphuric acid** | |
|---|---|
| PNEC | 8.8 mg/l (Sewage treatment plant) |
| | 0.00025 mg/l (Marine water) |
| | 0.0025 mg/l (Fresh water) |
| PNEC | 0.002 mg/kg (Marine sediment) |
| | 0.002 mg/kg (Fresh water sediment) |

· **Additional information:** The lists that were valid during the compilation were used as basis.

· **8.2 Exposure controls**

· **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.
See item 7.

· **Personal protective equipment**
· **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
· **Recommended filter device for short term use:** Combination filter B-P2
· **Protection of hands:**
Acid resistant gloves
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.
· **Material of gloves**
Fluorocarbon rubber (Viton)
Butyl rubber, BR
Recommended thickness of the material: ≥ 0.35 mm
· **Penetration time of glove material**
Value for the permeation: Level = 1 ( < 10 min )
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Tightly sealed safety glasses.

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· **Body protection:** Acid resistant protective clothing

· **Limitation and supervision of exposure into the environment:** Do not allow product to reach sewage system or water bodies.

## SECTION 9: Physical and chemical properties

| | |
|---|---|
| · **9.1 Information on basic physical and chemical properties** | |
| · **Appearance:** | |
| **Form / Physical state:** | Fluid |
| **Colour:** | Yellow |
| · **Odour:** | Odourless |
| · **Odour threshold:** | Not applicable |
| · **pH-value at 20 °C:** | 1 |
| · **Melting point/Freezing point:** | Not determined |
| · **Initial boiling point and boiling range:** | Not determined |
| · **Flash point:** | Not applicable |
| · **Flammability (solid, gas):** | Not applicable. |
| · **Decomposition temperature:** | Not determined. |
| · **Auto-ignition temperature:** | Product is not self-igniting. |
| · **Explosive properties:** | Product is not explosive. |
| · **Flammability or explosive limits:** | |
| **Lower:** | Not applicable |
| **Upper:** | Not applicable |
| · **Oxidising properties:** | none |
| · **Vapour pressure:** | Not determined. |
| · **Density at 20 °C:** | 1.56 g/cm³ |
| · **Relative density:** | Not determined. |
| · **Vapour density:** | Not determined. |
| · **Evaporation rate:** | Not determined. |
| · **Solubility(ies):** | |
| **Water:** | Fully miscible |
| · **Partition coefficient: n-octanol/water:** | Not determined. |
| · **Viscosity:** | Not determined. |
| · **Solvent content:** | |
| **Organic solvents:** | 0.0 % |
| **Water:** | > 30 % |
| **Solids content:** | < 5 % |
| · **9.2 Other information** | No further relevant information available. |

## SECTION 10: Stability and reactivity

· **10.1 Reactivity** see section 10.3
· **10.2 Chemical stability** Stable at ambient temperature (room temperature).
· **10.3 Possibility of hazardous reactions**
Corrosive action on metals
Reacts with metals forming hydrogen (--> Explosive!)
When diluting, always add acid to water, never vice versa
Diluting or dissolving in water always causes rapid heating
Reacts with reducing agents
Reacts with peroxides
Reacts with halogenated compounds
Reacts with oxidizing agents
Reacts with acids and alkali (lyes).
Reacts with ammonia ($NH_3$).

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· **10.4 Conditions to avoid**
strong heating
To avoid thermal decomposition do not overheat.
· **10.5 Incompatible materials:**
metals
combustible substances
organic solvents
· **10.6 Hazardous decomposition products:** 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 that are relevant for classification:** | | |
|---|---|---|
| **CAS: 7664-93-9 sulphuric acid** | | |
| Oral | LD50 | 2140 mg/kg (rat)<br>(IUCLID) |
| Inhalative | LC 50 | 510 (pure) mg/m³/2h (rat)<br>IUCLID |

· **Primary irritant effect:**
· **Skin corrosion/irritation**
Causes severe skin burns and eye damage.
· **Serious eye damage/irritation**
Causes serious eye damage.
Risk of blindness!

· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)** The following statements refer to the mixture:
· **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 (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
· **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

· **Additional toxicological information:**
In case of an acute molybdenum(VI) intoxication: diarrhoea, anaemia, fatigue, loss of appetite
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
The aerosol is corrosive to the eyes, the skin and the respiratory tract. Inhalation of aerosols may cause lung oedema.
Sulfuric acid: erosion of the teeth, cancer
· **Experience with humans:** Mo(VI): Can cause liver, kidney damages.

## SECTION 12: Ecological information

· **12.1 Toxicity**

| · **Aquatic toxicity:** | |
|---|---|
| **CAS: 7664-93-9 sulphuric acid** | |
| EC50 | > 100 mg/l/48h (Daphnia magna) (OECD 202)<br>(ECHA) |
| LC50 | 16-29 mg/l/96h (bluegill)<br>(Merck) |

· **Bacterial toxicity:** sulphates toxic > 2.5 g/l
· **Other information:**
Toxic for fish:
sulphates > 7 g/l
molybdenum compounds in general: > 25 mg/l
$NH_4^+$ > 0.3 mg/l
· **12.2 Persistence and degradability** .
· **Other information:**
Mixture of inorganic compounds.

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Methods for the determination of biodegradability are not applicable to inorganic substances.

· **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**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

· **12.6 Other adverse effects**

Harmful effect due to pH shift.
Forms corrosive mixtures with water even if diluted.
Avoid transfer into the environment.

· **Water hazard:**

Mixture (Self-assessment acc. VwVwS Annex 4, German regulation):
Water hazard class 1: slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.

## SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to disposers of hazardous waste.

| · **European waste catalogue** | |
|---|---|
| 16 05 07* | discarded inorganic chemicals consisting of or containing hazardous substances |

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleaning agent:** Water, if necessary with cleaning agent.

## SECTION 14: Transport information

| | |
|---|---|
| · **14.1 UN-Number** | |
| · **ADR, IMDG, IATA** | UN1830 |
| · **14.2 UN proper shipping name** | |
| · **ADR** | 1830 SULPHURIC ACID |
| · **IMDG, IATA** | SULPHURIC ACID |
| · **14.3 Transport hazard class(es)** | |
| · **ADR** | |


| | |
|---|---|
| · **Class** | 8 (C1) Corrosive substances. |
| · **Label** | 8 |
| · **IMDG, IATA** | |


| | |
|---|---|
| · **Class** | 8 Corrosive substances. |
| · **Label** | 8 |
| · **14.4 Packing group** | |
| · **ADR, IMDG, IATA** | II |
| · **14.5 Environmental hazards:** | Not applicable. |
| · **14.6 Special precautions for user** | Warning: Corrosive substances. |
| · **Kemler Number:** | 80 |

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| | |
|---|---|
| · **EMS Number:** | F-A,S-B |
| · **Segregation groups** | Acids |
| · **Stowage Category** | E |
| · **Stowage Code** | SW15 For metal drums, stowage category B. |
| · **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code** | Not applicable. |
| · **Transport/Additional information:** | |
| · **ADR** | |
| · **Limited quantities (LQ)** | 1L |
| · **Excepted quantities (EQ)** | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |
| · **Transport category** | 2 |
| · **Tunnel restriction code** | E |
| · **IMDG** | |
| · **Limited quantities (LQ)** | 1L |
| · **Excepted quantities (EQ)** | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |

## SECTION 15: Regulatory information

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

· **Regulation (EC) No 689/2008 concerning the export and import of dangerous chemicals:**

None of the ingredients is listed.

· **Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:**

None of the ingredients is listed.

· **Directive 2012/18/EU (SEVESO III):**
· **Named dangerous substances - ANNEX I** None of the ingredients is listed.
· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

· **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

· **Training hints** Provide adequate information, instruction and training for operators.

· **Abbreviations and acronyms:**
STOT: specific target organ toxicity
SE: single exposure
RE: repeated exposure
EC50: half maximal effective concentration
IC50: hallf maximal inhibitory concentration
NOEL or NOEC: No Observed Effect Level or Concentration
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
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)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)

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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
Eye Dam. 1: Serious eye damage/eye irritation – Category 1

· **Sources**
Data arise from safety data sheets, reference works and literature.
ECHA: European CHemicals Agency http://echa.europa.eu