Tintometer[®] Group **Water Testing**



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

Printing date 27.10.2023 Version number 7 (replaces version 6) Revision: 27.10.2023

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

- · 1.1 Product identifier
- Product name: KS228 Ammonium Molybdate PB1 Phosphate
- · Catalog number:

56Z02Z898, 56L022865, 56U022865, 56L022830, 56L022898, 56U022898, TF-K21735, AS-K20228-KW, AS-K25636-KW, AS-K25773-NF

- 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

Tintometer GmbH Schleefstraße 8-12 44287 Dortmund Made in Germany www.lovibond.com

The Tintometer Limited Lovibond® House Sun Rise Way Amesbury Wiltshire SP4 7GR United Kingdom

· Informing department: e-mail: sds@lovibond.com **Product Safety Department**

· 1.4 Emergency telephone number:

+44 1235 239670 Languages: English

SECTION 2: Hazards identification

- · 2.1 Classification of the substance or mixture
- · Classification according to Regulation (EC) No 1272/2008



GHS05 corrosion

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 GB CLP regulation.

· Hazard pictograms



GHS05

- · Signal word Danger
- Hazard-determining components of labelling:

sulphuric acid 26 %

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20-30%

· Hazard statements

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

· Precautionary statements

P280 Wear protective gloves / eye protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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. P390 Absorb spillage to prevent material damage.

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.

Determination of endocrine-disrupting properties

The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

- · 3 2 Mixtures
- · Description: sulfuric acid solution

 Dangerous 	components:
-------------------------------	-------------

CAS: 7664-93-9 EINECS: 231-639-5 Index No: 016-020-00-8 Reg.nr.: 01-2119458838-20-XXXX

sulphuric acid

Met. Corr.1, H290; Skin Corr. 1A, H314

Špecific concentration limits: Skin Corr. 1A; H314: C ≥ 15 % Skin Irrit. 2; H315: 5 % ≤ C < 15 %

Eye Dam. 1; H318: 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
- · General information Instantly remove any clothing soiled by the product.
- · After inhalation

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness bring patient into stable side position for transport.

· After skin contact

Clean with water and soap. If possible, also wash with polyethylene glycol 400.

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.

Call a doctor immediately.

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

breathing difficulty

sickness

vomiting

diarrhoea

pain

strong caustic effect.

- Danger Danger of gastric perforation.
- 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 Use fire fighting measures that suit the environment.

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.

Can be released in case of fire:

Sulphur oxides (SOx)

Nitrogen oxides (NOx)

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

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

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.

Neutralize with diluted sodium hydroxide solution.

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 7 for information on safe handling

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 Open and handle container with care.
- · 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
- · 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:

Keep container tightly sealed.

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Protect from heat and direct sunlight.

Protect from the effects of light.

Protect from humidity and keep away from water.

- · 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			
	*mist: defined as thoracic fraction			
IOELV (European Union)	Long-term value: 0.05 mg/m³			

Regulatory information

WEL (Great Britain): EH40/2020

IOELV (European Union): (EU) 2019/1831

· Additional information: IOELV = Indicative Occupational Exposure Limit

DNELs

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

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.

· Individual protection measures, such as personal protective equipment

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.

- · Eye/face protection Tightly sealed safety glasses.
- · Hand protection

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

nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 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.

- · Other skin protection (body protection): Acid resistant protective clothing
- · Breathing equipment: Use breathing protection against the effects of fumes/dust/aerosol.
- · Recommended filter device for short term use: Filter P2

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· Environmental exposure controls Do not allow product to reach sewage system or water bodies.

SECTION 9: Physical and chemical properties

 \cdot 9.1 Information on basic physical and chemical properties

Physical state
Form:
Colour:
Odour:
Odourless
Odour threshold:
Melting point/Freezing point:
Fluid
Colourless
Odourless
Not determined.
Not determined.

• Boiling point or initial boiling point and boiling range Not determined.
• Flammability The product is not combustible.

• Explosive properties: Product is not explosive.

· Lower and upper explosion limit

Lower:
Upper:
Not determined.
Not determined.
Flash point:
Not applicable.
Auto-ignition temperature:
Not applicable.
Not determined.
Pecomposition temperature:
Not determined.
pH at 20°C

Kinematic viscosity Not determined.

· Solubility

· Water: Fully miscible

· Partition coefficient n-octanol/water (log value) Not applicable (mixture).

· Vapour pressure: Not determined.

· Density and/or relative density

Density at 20°C:
 Relative density:
 Relative gas density
 Particle characteristics
 1.3 g/cm³
 Not determined.
 Not determined.
 Not applicable (liquid).

· 9.2 Other information

· Information with regard to physical hazard classes

· Corrosive to metals May be corrosive to metals.

· Metals that are corroded by the substance or mixture Information on incompatible materials can be found in Sections 7 and

10.

· Other safety characteristics

· Oxidising properties: none

Additional information

· Solids content: <5 %

· Solvent content:

· Organic solvents: 0.0 % · Water: > 60 %

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

Reacts with metals forming hydrogen (Danger of explosion in case of large amounts!)

Corrosive action on metals

When diluting, always add acid to water, never vice versa Diluting or dissolving in water always causes rapid heating

Reacts with peroxides

Reacts with reducing agents

Reacts with halogenated compounds

Reacts with oxidizing agents

Reacts with acids and alkali (lyes).

Reacts with ammonia (NH₃).

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· 10.4 Conditions to avoid

strong heating

To avoid thermal decomposition do not overheat.

· 10.5 Incompatible materials:

metals

nitriles

combustible substances

organic solvents

· 10.6 Hazardous decomposition products: see section 5

SECTION 11: Toxicological information

- · 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008
- · 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) (IUCLID)	
Inhalative	LC 50	510 mg/m³/2h (rat) IUCLID	

- · 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.
- · 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.
- · Information on likely routes of exposure

The intake of sulfuric acid is mainly to be expected via the inhalative pathway in the form of aerosols. No studies on absorbability are available.

Generally, local reactions cause the main effects.

Following impact to the skin strong local effects are the main issue. There is no indication of absorption of relevant amounts of S. via the intact skin.

Absorbability via the gastrointestinal tract is assumed. However, no studies on the kinetics of uptake are available. [GESTIS]

· Additional toxicological information:

In case of an acute molybdenum(VI) intoxication: diarrhoea, anaemia, fatigue, loss of appetite. Toxic effect on liver and kidneys after

high doses.

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.

CAS: 7664-93-9 sulphuric acid

(source: GESTIS)

Main toxic effects

Acute: Irritation up to chemical burns to the mucous membranes and skin, danger of serious damage to the eyes and lungs Chronic: Irritation to the eyes and airways, erosion of the teeth, damage to the skin

Further Information:

Concentrated S. differs considerably from dilute Sulfuric acid with regard to chemical properties and effects. With increased dilution Sulfuric acid acts less aggressively.

· 11.2 Information on other hazards

· Endocrine disrupting properties The product does not contain substances with endocrine disrupting properties.

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· Other information

According to the information available to us, the chemical, physical and toxicological properties of the substances mentioned in Chapter 3 have not been thoroughly investigated.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

CAS: 7664-93-9 sulphuric acid

EC50 >100 mg/l/48h (Daphnia magna) (OECD 202)

(ECHA)

LC50 16-29 mg/l/96h (bluegill)

(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

 $NH_4^+ > 0.3 \text{ mg/l}$

- 12.2 Persistence and degradability .
- Other information:

Mixture of inorganic compounds.

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

· 12.3 Bioaccumulative potential

Depending on the concentration, nitrogen compounds may contribute to the eutrophication of water supplies.

- · 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 Endocrine disrupting properties The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects

Neutralisation possible in waste water treatment plants.

Avoid transfer into the environment.

Water hazard:

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 or ID number · ADR, IMDG, IATA	UN2796
· 14.2 UN proper shipping name · ADR	2796 SULPHURIC ACID solution
· IMDG, IATA	SULPHURIC ACID solution

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· 14.3 Transport hazard class(es)

· ADR



· Class 8 (C1) Corrosive substances.

· Label

· IMDG, IATA



· Class 8 Corrosive substances.

· Label

· 14.4 Packing group

· ADR, IMDG, IATA Ш

· 14.5 Environmental hazards:

· Marine pollutant:

· 14.6 Special precautions for user Warning: Corrosive substances.

· Kemler Number: 80 · EMS Number: F-A,S-B Segregation groups (SGG1) Acids

Stowage Category

· 14.7 Maritime transport in bulk according to IMO

instruments Not applicable.

· Transport/Additional information:

Excepted quantities (EQ): E2 · Limited quantities (LQ) 1L · Excepted quantities (EQ) Code: E2

> Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml

· Transport category · Tunnel restriction code Ε

· Limited quantities (LQ) 1L · Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 ml 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
- · Poisons Act UK
- Regulated explosives precursors

The substance falls under regulated explosive precursors due to the fact that the concentration is greater than/equal (c≥ x%) the stated mass percentage:

CAS: 7664-93-9 sulphuric acid 15%

Regulated poisons

None of the ingredients is listed.

Reportable explosives precursors

None of the ingredients is listed.

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· Reportable poisons

None of the ingredients is listed.

· Regulation (EU) 2019/1148 on the marketing and use of explosives precursors

Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point. Please see https://ec.europa.eu

· explosives precursors - ANNEX I

CAS: 7664-93-9 sulphuric acid

*

· Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)

None of the ingredients is listed.

Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology:

None of the ingredients is listed.

Regulation (EC) No 273/2004 on drug precursors

CAS: 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

CAS: 7664-93-9 sulphuric acid

3

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

None of the ingredients is listed.

· REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)

None of the ingredients is listed.

· LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)

None of the ingredients is listed.

· Substances of very high concern (SVHC) according to REACH, Article 57

This product does not contain any substances of very high concern above the legal concentration limit of ≥ 0.1% (w / w).

Substances of very high concern (SVHC) according to UK REACH

This product does not contain any substances of very high concern above the legal concentration limit of ≥ 0.1% (w / w).

- · 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 (94/33/EC).
- · 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.

- · Training hints Provide adequate information, instruction and training for operators.
- Relevant phrases

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

Abbreviations and acronyms:

EC50: effective concentration, 50 percent (in vivo)

STOT: specific target organ toxicity

SE: single exposure

RE: repeated exposure

EC50: half maximal effective concentration

IC50: half maximal inhibitory concentration

NOEL or NOEC: No Observed Effect Level or Concentration

ADR: Accord relatif au transport international 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

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CAS: Chemical Abstracts Service (division of the American Chemical Society) DNEL: Derived No-Effect Level (UK REACH) PNEC: Predicted No-Effect Concentration (UK REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic SVHC: Substances of Very High Concern 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

Data arise from safety data sheets, reference works and literature. ECHA: European CHemicals Agency http://echa.europa.eu IUCLID (International Uniform Chemical Information Database) GESTIS- Stoffdatenbank (Substance Database, Germany)

* Data compared to the previous version altered.

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