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 6 (replaces version 5) Revision: 27.10.2023

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

- · 1.1 Product identifier
- · Product name: KS872 1000mg/l Ferric Iron Standard
- · Catalog number: 56Z087298, 56L087265, 56U087265
- 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 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

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

Skin Corr. 1B $\,$ 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:

nitric acid 6.4%

· Hazard statements

H290 May be corrosive to metals.

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H314 Causes severe skin burns and eye damage.

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· Precautionary statements

P260 Do not breathe mist/vapours/spray.

P280 Wear protective gloves/protective clothing/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.

· Additional information:

EUH071 Corrosive to the respiratory tract.

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: aqueous solution

· Dangerous components:		
CAS: 7697-37-2	nitric acid	5–10%
EINECS: 231-714-2	♦ Ox. Liq. 3, H272; ♦ Acute Tox. 3, H331; ♦ Met. Corr.1, H290; Skin Corr. 1A,	
	H314, EUH071	
Reg.nr.: 01-2119487297-23-XXXX	ATE: LC50/4h inhalative: 2.65 mg/l	
	Specific concentration limits: Ox. Liq. 3; H272: C ≥ 65 %	
	Skin Corr. 1A; H314: C ≥ 20 %	
	Skin Corr. 1B; H314: 5 % ≤ C < 20 %	

· 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.
- · 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:

burns

after inhalation:

coughing

breathing difficulty

damage to the affected mucous membranes

after swallowing:

strong caustic effect.

vomiting diarrhoea

pain

after absorption of large amounts:

methaemoglobinaemia

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· Danger

Danger of impaired breathing.

Danger of system failure.

Danger of pulmonary oedema.

Risk of serious damage to eyes.

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

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.

nitrous gases

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
- 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.

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
- · Requirements to be met by storerooms and containers:

Store in cool location.

Keep only in original packaging.

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 \cdot Information about storage in one common storage facility:

Store away from metals.

Do not store together with alkalis (caustic solutions).

Further information about storage conditions:

Keep container tightly sealed.

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: 7697-37-2 nitric acid

WEL (Great Britain) Short-term value: 2.6 mg/m³, 1 ppm IOELV (European Union) Short-term value: 2.6 mg/m³, 1 ppm

Regulatory information

WEL (Great Britain): EH40/2020

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

- · Additional information: IOELV = Indicative Occupational Exposure Limit
- · 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.

- · 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.

Use safety glasses that have been tested and approved in accordance with government standards such as EN 166.

Hand protection

Protective 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): Protective work clothing.
- Breathing equipment: Use breathing protection against the effects of fumes/dust/aerosol.
- · Recommended filter device for short term use: Combination filter E-P2
- · Environmental exposure controls Avoid release to the environment.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

Physical state Fluid
Form: Solution
Colour: Colourless
Odour: Odourless

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· Odour threshold: Not applicable. · Melting point/Freezing point: 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

Not applicable. Lower: Not applicable. Upper: · Flash point: Not applicable. Auto-ignition temperature: Not applicable. · Decomposition temperature: Not determined. < 1

· pH

Strongly acidic · 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: ~1.03 g/cm3 · Relative density: Not determined. Relative gas density Not determined. Particle characteristics 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

· Other safety characteristics

Oxidising properties: none

Additional information

· Solids content: < 0.25 %

· Solvent content:

0.0 % Organic solvents: · Water: > 90 %

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

Acts as an oxidizing agent on organic materials such as wood, paper and fats

Reacts with alcohols

Reacts with reducing agents

Reacts with acids and alkali (lyes).

Reacts with ammonia (NH₃).

· 10.4 Conditions to avoid To avoid thermal decomposition do not overheat.

· 10.5 Incompatible materials:

metals

alkali metals

combustible substances

organic solvents

organic substances

10.6 Hazardous decomposition products:

nitrous gases

In case of fire: see section 5.

GB -

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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:

Oral LDLo 430 mg/kg (human) (IUCLID) Inhalative LC50/4h 2.65 mg/l (ATE) Registrant, ECHA: Under the conditions of the study (OECD 403) the LC50 for male and female rats after inhalation exposure to vapor atmosphere of nitric acid containing 0.8 % aerosol fraction is > 2.65 mg/L (referring to pure nitric acid).

- · 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

An intake of nitric acid (during occupational handling) is mainly to be expected via the respiratory tract.

Exposure to acid vapors caused irritation to the eyes and skin but damage to the airways is of the greatest concern. [GESTIS]

· Additional toxicological information:

The following applies to soluble iron compounds: nausea and vomiting after swallowing. The absorption of large quantities is followed by cardiovascular disorders. Toxic effect on liver and kidneys.

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: 7697-37-2 nitric acid

. (source: GESTIS)
Main toxic effects

Acute: Irritation and corrosion to the eyes, airways and skin, danger of severe damage to the eyes and lungs,

after swallowing life threatening chemical burns in the gastrointestinal tract

Chronic: Diseases of the airways, damage to the teeth

- · 11.2 Information on other hazards
- · Endocrine disrupting properties The product does not contain substances with endocrine disrupting properties.
- 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: 7697-37-2 nitric acid

LC50 72 mg/l/96h (mosquitofish)

(IUCLID)

- 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

Pow = n-octanol/wasser partition coefficient

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log Pow < 1 = Does not accumulate in organisms.

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CAS: 7697-37-2 nitric acid

log Pow -2.3 (.)

- 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

Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of water supplies. Harmful effect due to pH shift.

Forms corrosive mixtures with water even if diluted.

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	UN3264
· 14.2 UN proper shipping name · ADR · IMDG, IATA	3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
· 14.3 Transport hazard class(es) · ADR	



Class 8 (C1) Corrosive substances.
Label 8

· IMDG, IATA



· Class 8 Corrosive substances. babel 8

· 14.4 Packing group

· ADR, IMDG, IATA

• 14.5 Environmental hazards: Not applicable.

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• 14.6 Special precautions for user Warning: Corrosive substances.

Kemler Number:
EMS Number:
Segregation groups
(SGG1) Acids

· Stowage Category B

• Stowage Code SW2 Clear of living quarters.

Segregation Code SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides

· 14.7 Maritime transport in bulk according to IMO

instruments Not applicable.

· Transport/Additional information:

· ADR

· 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 2 · Tunnel restriction code E

·IMDG

Limited quantities (LQ) 1L 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: 7697-37-2 nitric acid 3%

Regulated poisons

None of the ingredients is listed.

· Reportable explosives precursors

None of the ingredients is listed.

· 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: 7697-37-2 nitric 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

None of the ingredients is listed.

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

None of the ingredients is listed.

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· 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

H272 May intensify fire; oxidiser. H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H331 Toxic if inhaled.

EUH071 Corrosive to the respiratory tract.

Abbreviations and acronyms:

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

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

SVHC: Substances of Very High Concern vPvB: very Persistent and very Bioaccumulative

Ox. Liq. 3: Oxidizing liquids – Category 3

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

Acute Tox. 3: Acute toxicity – Category 3
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
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

GESTIS- Stoffdatenbank (Substance Database, Germany)

IUCLID (International Uniform Chemical Information Database)

* Data compared to the previous version altered.