Tintometer[®] Group Water Testing



phone: +49 (0)231 94510-0 e-mail: sales@lovibond.com

phone: +44 1980 664800

e-mail: SDS@lovibond.uk

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Safety data sheet according to Regulation (EC) No 1907/2006, Article 31

Printing date 29.08.2024 Version number 37 (replaces version 36) Revision: 29.08.2024

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

- · 1.1 Product identifier
- · Product name: Vario Sulfa 4 F10, F25 ml
- ·_SDS valid from Lot: AA8A0829
- · Catalog number: 00532159, 00532169, 532150, 532153, 532160, 532162, 4532150, 4532160
- · 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



GHS07

Acute Tox. 4 H302 Harmful if swallowed. Acute Tox. 4 H332 Harmful if inhaled.

Eye Irrit. 2 H319 Causes serious eye irritation. STOT SE 3 H335 May cause respiratory irritation.

- · 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



GHS07

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

barium chloride dihydrate

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Product name: Vario Sulfa 4 F10, F25 ml

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citric acid

· Hazard statements

H302+H332 Harmful if swallowed or if inhaled. H319 Causes serious eye irritation. H335 May cause respiratory irritation.

Precautionary statements

P261 Avoid breathing dust.

P280 Wear protective gloves/protective clothing/eye protection.

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

do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

· 2.3 Other hazards No further relevant information available.

· 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: Mixture of organic and inorganic compounds

· Dangerous components:			
CAS: 77-92-9 EINECS: 201-069-1 Index No: 607-750-00-3 Reg.nr.: 01-2119457026-42-XXXX	citric acid	60–70%	
CAS: 10326-27-9 EINECS: 233-788-1 Index No: 056-004-00-8	barium chloride dihydrate ♣ Acute Tox. 3, H301; ♦ Acute Tox. 4, H332 ATE: LD50 oral: 100 mg/kg	20–30%	

• 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 rinse with water.
- · After eye contact Rinse opened eye for several minutes (at least 15 min) under running water. Then consult doctor.
- After swallowing

Rinse out mouth and then drink 1-2 glasses of water.

Seek medical treatment.

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

irritations

absorption

after inhalation:

mucosal irritations, cough, shortness of breath

after swallowing:

sickness

vomiting

diarrhoea

pain

after absorption:

dizziness

CNS disorders

respiratory paralysis

Danger

Danger of system failure.

Danger of disturbed cardiac rhythm.

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· 4.3 Indication of any immediate medical attention and special treatment needed:

1-5% sodium sulfate solution in acute poisoning

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:

Hydrogen chloride (HCI)

Barium oxide

Carbon monoxide (CO) and carbon dioxide (CO₂)

- 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.

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.

Collect mechanically.

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 dust.

· Hygiene measures:

Do not inhale dust / smoke / mist.

Avoid contact with the eyes.

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.

Unsuitable material for container: metals, metal alloys

- Information about storage in one common storage facility: Store away from oxidising agents.
- Further information about storage conditions:

Protect from heat and direct sunlight.

Protect from the effects of light.

Store under dry conditions.

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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: 10326-27-9 barium chloride dihydrate			
WEL (Great Britain)	Long-term value: 0.5 mg/m³ as Ba		
IOELV (European Union)	Long-term value: 0.5 mg/m³ as Ba		

Regulatory information

WEL (Great Britain): EH40/2020

IOELV (European Únion): (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

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: Filter P3
- · Environmental exposure controls 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

Physical state
Form:
Colour:
Odourless
Odour threshold:
Melting point/Freezing point:
Boiling point or initial boiling point and boiling range

Solid.
Powder
White
Odourless
Not applicable.
Not determined.
Boiling point or initial boiling point and boiling range
Not determined.

Flammability The product is not combustible.

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• **Explosive properties:** Product is not explosive.

· Lower and upper explosion limit

Lower: Not applicable.
Upper: Not applicable.

Flash point: Not applicable.

Auto-ignition temperature: Not applicable (solid).

Decomposition temperature: Not determined.

· pH (12 g/l) at 20°C 2.4

Kinematic viscosity Not applicable (solid).

·Solubility

· Water: Soluble

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

· Vapour pressure: Not applicable.

· Density and/or relative density

Density at 20°C: ~2.27 g/cm³
 Relative density: Not determined.
 Relative gas density Not applicable (solid).
 Particle characteristics Not determined.

· 9.2 Other information

Information with regard to physical hazard classes

· Corrosive to metals Void

Other safety characteristics

· Oxidising properties: none

Additional information

· Solids content: 100 %

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

Aqueous solution reacts acidic.

Aqueous solution reacts with metals.

Reacts with acids

Reacts with reducing agents

Reacts with various metals

Reacts with strong oxidizing agents

Citric acid: Incompatible with bases, strong oxidising agents, amines. Contact with metal nitrates causes explosion hazard.

Attacks aluminium, copper, zinc and their alloys - in case of moisture.

furan-2-percarbonic acid

---> Explosive

- · 10.4 Conditions to avoid Strong heating (decomposition)
- · 10.5 Incompatible materials:

metals

aluminium, copper, zinc, metal ions

combustible substances

· 10.6 Hazardous decomposition products:

Chlorine compounds

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

Classification according to calculation procedure:

Harmful if swallowed or if inhaled.

· Acute toxicity estimate (ATE_(MIX)) - Calculation method:

Oral CLP ATE_(MIX) 333 mg/kg (.)
Inhalative CLP ATE_(MIX) 5 mg/l/4h (dust)

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		(osinai si paga o)		
· LD/LC50 values that are relevant for classification:				
CAS: 77-9	CAS: 77-92-9 citric acid			
Oral	LD50	3000 mg/kg (rat) (IUCLID)		
Dermal	LD50.	>2000 mg/kg (rat) (limit test: there were no deaths)		
CAS: 103	CAS: 10326-27-9 barium chloride dihydrate			
Oral	LD50	100 mg/kg (ATE) (for calculation)		
		118 mg/kg (rat) (anhydrous - IUCLID)		
Inhalative	LC50/4h	1.5 mg/l (ATE)		

- · Skin corrosion/irritation Based on available data, the classification criteria are not met.
- · Serious eye damage/irritation Causes serious eye irritation.
- · Information on components:

CAS 10326-27-9: chronic: dermatitis

Citric acid: A single drop of a 2% or 5% solution in water causes little or no irritation.

A 0.5% solution held in contact with the eye causes irreversible tissue damage to the cornea.

Citric Acid caused mild irritation when 500 mg was tested on rabbit skin in a 24-hour test.

(CHEMINFO, Canadian Centre for Occupational Health and Safety)

CAS: 77-92-9 citric acid		
Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 492	(rabbit: severe irritations)

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

· Information on components:

CAS: 77-92-9 citric acid

Sensitisation | OECD 406 | (guinea pig: negative) (EPA OPP 81-6: Guinea pig maximisation test)

- · 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.
- Information on components:

OECD 414: Teratogenicity testing

OECD 473: Mutagenicity testing

OECD 471, 474, 476, 487: Germ cell mutagenicity testing

CAS: 77-92-9 citric acid

OECD 471 (negative) (Bacterial Reverse Mutation Test - Ames test)

- · STOT (specific target organ toxicity) -single exposure May cause respiratory irritation.
- 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

Under workplace conditions, inhalative exposure is the main route of exposure of citric acid. Inhalative exposure is possible in the form of dust or aerosols of aqueous solutions, although the warning irritant effect means that inhalation of very high concentrations is only to be expected accidentally.

Irrespective of this, citric acid is mainly ingested orally with food. [GESTIS]

The main route of absorption of barium chloride is through the respiratory tract in the form of dusts or aerosols.

Soluble barium compounds are well absorbed by inhalation.[GESTIS]

· Additional toxicological information:

CAS: 77-92-9 citric acid

. (source: GESTIS)

Main toxic effects:

Acute: Irritant effect on the eyes and upper respiratory tract; no evidence of systemic toxic effects under occupationally relevant exposure conditions

chronic: irritative effects on mucous membranes and skin.

Enamel damage, dermatitis (Merck)

Further information:

Depending on the pH value, dust or concentrated aqueous solutions are highly irritating to corrosive to the eye.

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CAS: 10326-27-9 barium chloride dihydrate

. (source: GESTIS)

Main toxic effects:

acute: Irritation of the mucous membranes, gastrointestinal complaints, hypokalemia, cardiac arrhythmia, muscle weakness, kidney damage.

chronic: after repeated oral intake: kidney damage in animal experiments

- · 11.2 Information on other hazards
- Endocrine disrupting properties The product does not contain substances with endocrine disrupting properties.
- · Other information

Other dangerous properties can not be excluded.

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

· Aquat	· Aquatic toxicity:				
CAS:	CAS: 77-92-9 citric acid				
EC50	~120 mg/l (Daphnia magna) (72 h) (IUCLID)				
EC5	485 mg/l (Entosiphon sulcatum) (72h) (MERCK)				
LC50	440–760 mg/l/96h (gold orfe) (IUCLID)				
CAS:	CAS: 10326-27-9 barium chloride dihydrate				
	870 mg/l/48h (gold orfe) IUCLID				
EC50	21.9 mg/l/48h (Daphnia magna) (IUCLID)				
D 1					

· Bacterial toxicity:

CAS: 77-92-9 citric acid

EC5 >10000 mg/l (Pseudomonas putida) (16h (Lit.))

Other information:

Toxic for fish:

Ba > 158 mg/l

· 12.2 Persistence and degradability

CAS: 77-92-9 citric acid

OECD 301 B 97 % / 28 d (readily biodegradable) (CO2 Evolution Test)

OECD 302 B 98 % / 2 d (readily eliminated from water) (Zahn-Wellens / EMPA Test)

12.3 Bioaccumulative potential

Pow = n-octanol/wasser partition coefficient

log Pow < 1 = Does not accumulate in organisms.

CAS: 77-92-9 citric acid

log Pow -1.72 (.) (OECD 117, 20°C)

CAS: 10326-27-9 barium chloride dihydrate

log Pow 0.85 (.)

- · 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

Harmful effect due to pH shift.

Reacts with water to harmful mixtures.

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.

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Must not reach sewage water or drainage ditch undiluted or unneutralised.

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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 06* laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals

- 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	Void
· 14.2 UN proper shipping name · ADR, IMDG, IATA	Void
· 14.3 Transport hazard class(es)	
· ADR, IMDG, IATA · Class	Void
· 14.4 Packing group · ADR, IMDG, IATA	Void
· 14.5 Environmental hazards:	Not applicable.
· 14.6 Special precautions for user	Not applicable.
· 14.7 Maritime transport in bulk according to II instruments	MO Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- · Poisons Act UK
- · Regulated explosives precursors

None of the ingredients is listed.

· Regulated poisons

CAS: 10326-27-9 barium chloride dihydrate

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 not regulated
- 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.

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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.

REGULATION (EU) 2024/590 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.
- · Information about limitation of use: Not required.
- 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

This Safety Data Sheets is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

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

· Relevant phrases

H301 Toxic if swallowed.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

Abbreviations and acronyms:

OECD: Organisation for Economic Co-operation and Development

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

ATE: Acute toxicity estimate values Acute Tox. 3: Acute toxicity – Category 3 Acute Tox. 4: Acute toxicity – Category 4

Eye Irrit. 2: Serious eye damage/eye irritation - Category 2

STOT SE 3: Specific target organ toxicity (single exposure) - Category 3

· Sources

Data arise from safety data sheets, reference works and literature.

IUCLID (International Uniform Chemical Information Database)

ECHA: European CHemicals Agency http://echa.europa.eu

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GESTIS- Stoffdatenbank (Substance Database, Germany)

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* Data compared to the previous version altered.

GB —