# Tintometer<sup>®</sup> Group Water Testing



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Page 1/10

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

Printing date 30.10.2023 Version number 2 (replaces version 1) Revision: 30.10.2023

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

- · 1.1 Product identifier
- · Product name: Vario Alkali Solution
- · Catalog number: 424326, 531450, 531450-0
- 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. 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:

sodium hydroxide

· Hazard statements

H290 May be corrosive to metals.

(Contd. on page 2)

Printing date 30.10.2023 Version number 2 (replaces version 1) Revision: 30.10.2023

**Product name: Vario Alkali Solution** 

H314 Causes severe skin burns and eye damage.

(Contd. of page 1)

20-30%

#### · 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. 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 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.

Vapours of the product are heavier than air and may accumulate on the ground, in mines, drains or cellars with higher concentration.

#### · 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: 1310-73-2 EINECS: 215-185-5 Index No: 011-002-00-6 Reg.nr.: 01-2119457892-27-XXXX

sodium hydroxide ♦ Met. Corr.1, H290; Skin Corr. 1A, H314 Specific concentration limits: Skin Corr. 1A; H314: C ≥ 5 %

Skin Corr. 1B; H314:  $2\% \le C < 5\%$ Skin Irrit. 2; H315:  $0.5\% \le C < 2\%$ 

Eye Irrit. 2; H319: 0.5 % ≤ C < 2 %

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:

burns

after inhalation:

mucosal irritations, cough, shortness of breath

damage to the affected mucous membranes possible

fatigue

dizziness

after swallowing:

strong caustic effect.

sickness

vomiting

diarrhoea

(Contd. on page 3)

Printing date 30.10.2023 Version number 2 (replaces version 1) Revision: 30.10.2023

**Product name: Vario Alkali Solution** 

(Contd. of page 2)

pain

· Danger

Danger of gastric perforation.

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

Can form explosive gas-air mixtures.

mixture with combustible ingredients

Formation of toxic gases is possible during heating or in case of fire.

Can be released in case of fire:

nitrous gases

Nitrogen oxides (NOx)

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.

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:

Use only in well ventilated areas.

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.

(Contd. on page 4)

Printing date 30.10.2023 Version number 2 (replaces version 1) Revision: 30.10.2023

**Product name: Vario Alkali Solution** 

(Contd. of page 3)

· 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.

Do not use light alloy containers.

Information about storage in one common storage facility:

Store away from metals.

Do not store together with acids.

see chapter 10

Further information about storage conditions:

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: 1310-73-2 sodium hydroxide

WEL (Great Britain) Short-term value: 2 mg/m³

- · Regulatory information WEL (Great Britain): EH40/2020
- · DNFI s

Derived No Effect Level (DNEL)

#### CAS: 1310-73-2 sodium hydroxide

Inhalative DNEL 1 mg/m³ (Worker / long-term / local effects)

1 mg/m³ (Consumer / long-term / local 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.

- · 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

Alkaline 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)

Recommended thickness of the material: ≥ 0.7 mm

Penetration time of glove material

Breakthrough time: > 480 min

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

As protection from splashes gloves made of the following materials are suitable:

nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 mm

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): Alkaline resistant protective clothing
- · Breathing equipment: Use breathing protection against the effects of fumes/dust/aerosol.

(Contd. on page 5)

Printing date 30.10.2023 Version number 2 (replaces version 1) Revision: 30.10.2023

**Product name: Vario Alkali Solution** 

(Contd. of page 4)

· Recommended filter device for short term use: Combination filter A-P2

· 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:
Uight yellow
Odourless
Odour threshold:
Melting point/Freezing point:
Not determined.

Melting point/reezing point:
 Boiling point or initial boiling point and boiling range Not determined.

• Flammability mixture with combustible ingredients

• Explosive properties: Product is not explosive. However, formation of explosive air/steam

mixtures is possible.

· Lower and upper explosion limit

Lower: 3.6 Vol % (CAS: 102-71-6 Triethanolamine)
Upper: 7.2 Vol % (CAS: 102-71-6 Triethanolamine)
Flash point: 179°C (CAS: 102-71-6 Triethanolamine)
Auto-ignition temperature: 324°C (CAS: 102-71-6 Triethanolamine)

· **Decomposition temperature:** Not determined.

· pH at 20°C 13

Strongly alkaline
• 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: ~1.27 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

10.

· Other safety characteristics

· Oxidising properties: none

**Additional information** 

· Solids content: 20-30 %

· Solvent content:

• Organic solvents: 10-20 % • Water: 60-70 %

# **SECTION 10: Stability and reactivity**

- · 10.1 Reactivity Fumes can combine with air to form an explosive mixture.
- · 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 (Danger of explosion in case of large amounts!)

In contact with nitrites, nitrates or nitrous acid possible release of nitrosamines (carcinogenic)!

Corrodes aluminium

Reacts with oxidizing agents

Exothermic reaction with acids

· 10.4 Conditions to avoid Strong heating (decomposition)

(Contd. on page 6)

Printing date 30.10.2023 Version number 2 (replaces version 1) Revision: 30.10.2023

**Product name: Vario Alkali Solution** 

(Contd. of page 5)

· 10.5 Incompatible materials:

metals
light metals
organic substances
aluminium
zinc
non-ferrous metal

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: 1310-73-2 sodium hydroxide

Oral LDLo 500 mg/kg (rabbit)

(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.
- · Information on components:

CAS: 1310-73-2 sodium hydroxide

Sensitisation Patch test (human) (negative)

- · 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

In the workplace, sodium hydroxide can be inhaled in the form of dusts or as a liquid aerosol. Due to the pronounced irritant effect (warning effect), prolonged massive exposures are generally avoided. In case of accidental ingestion of dust or swallowing of solution, rapid penetration of the alkali or Na and OH ions into the contacted tissues and partial transfer into the blood is to be expected.

Even if NaOH comes into contact with the skin as a solid, it will act as a concentrated solution due to its hygroscopicity through rapid water absorption.

The most frequent causes of accidents in occupational handling are accidental direct contact with eyes and skin.

#### · Additional toxicological information:

Under given conditions, contact with nitrites or nitric acid can lead to the formation of nitrosamines, which have shown themselves to be carcinogenic in animal experiments.

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach. CAS 102-71-6 is skin-resorbing.

# CAS: 1310-73-2 sodium hydroxide

. (source: GESTIS)

Main toxic effects:

Acute: strong irritation and caustic effect on all contacted mucous membranes and the skin, risk of irreversible eye damage (risk of blindness)

Chronic: Irritant effect on eyes, respiratory tract and skin

#### Further information:

Irrespective of the route of exposure, the focus is on the local effect, which is characterized by swelling and dissolution of the contacted tissue (colliquation necrosis) that progresses rapidly in depth.

The extent of the tissue damage essentially depends on the duration of exposure, concentration, pH value, dose and onset of treatment measures.

(Contd. on page 7)

Printing date 30.10.2023 Version number 2 (replaces version 1) Revision: 30.10.2023

**Product name: Vario Alkali Solution** 

(Contd. of page 6)

- · 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: 1310-73-2 sodium hydroxide

LC50 40.4 mg/l/48h (Ceriodaphnia sp.) (ECHA)

· Bacterial toxicity:

#### CAS: 1310-73-2 sodium hydroxide

EC50 22 mg/l (Photobacterium phosphoreum) (15 min)

- 12.2 Persistence and degradability No further relevant information available.
- · 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 Endocrine disrupting properties The product does not contain substances with endocrine disrupting properties.
- · 12.7 Other adverse effects

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 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	UN1824
· 14.2 UN proper shipping name · ADR	1824 SODIUM HYDROXIDE SOLUTION
· IMDG, IATA	SODIUM HYDROXIDE SOLUTION

(Contd. on page 8)

Printing date 30.10.2023 Version number 2 (replaces version 1) Revision: 30.10.2023

Product name: Vario Alkali Solution

(Contd. of page 7)

· 14.3 Transport hazard class(es)

· ADR



· Class 8 (C5) Corrosive substances.

· Label 8

· IMDG, IATA



· Class 8 Corrosive substances.

· Label

· 14.4 Packing group

· ADR, IMDG, IATA

· 14.5 Environmental hazards: Not applicable.

• 14.6 Special precautions for user Warning: Corrosive substances.

Kemler Number:
 EMS Number:
 Segregation groups
 Kemler Number:
 F-A,S-B
 (SGG18) Alkalis

Stowage Category A

Segregation Code SG35 Stow "separated from" SGG1-acids

· 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 · 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

None of the ingredients is listed.

· Regulated poisons

None of the ingredients is listed.

· Reportable explosives precursors

None of the ingredients is listed.

· Reportable poisons

The substance falls under reportable poisons due to the fact that the concentration is greater than/equal ( $c \ge x\%$ ) the stated mass percentage:

(Contd. on page 9)

Printing date 30.10.2023 Version number 2 (replaces version 1) Revision: 30.10.2023

**Product name: Vario Alkali Solution** 

(Contd. of page 8)

CAS: 1310-73-2 sodium hydroxide

12% of total caustic alkalinity

- · 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:

CAS 102-71-6: c < 30% and therefore not relevant

CAS: 102-71-6 Triethanolamine

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 (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:

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)

DNEL: Derived No-Effect Level (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

(Contd. on page 10)

Page 10/10

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

Printing date 30.10.2023 Version number 2 (replaces version 1) Revision: 30.10.2023

**Product name: Vario Alkali Solution** 

Skin Corr. 1A: Skin corrosion/irritation – Category 1A Eye Dam. 1: Serious eye damage/eye irritation – Category 1 (Contd. of page 9)

#### Sources

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

\* Data compared to the previous version altered.

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