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



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Page 1/9

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

Printing date 17.04.2024 Version number 25 (replaces version 24) Revision: 17.04.2024

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

- · 1.1 Product identifier
- · Product name: Calcium Hardness
- · Catalog number: 00515191, 515190BT, 515191BT, 505191, 00515199BT, 00505191
- 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

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:

lithium hydroxide

· Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection.

(Contd. on page 2)

Printing date 17.04.2024 Version number 25 (replaces version 24) Revision: 17.04.2024

**Product name: Calcium Hardness** 

(Contd. of page 1)

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 POISON CENTER/doctor.

- · 2.3 Other hazards Acid burns have to treated immediately, as it may otherwise cause badly curing wounds.
- · Results of PBT and vPvB assessment

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

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: 1310-65-2		lithium hydroxide	10–20%
EINECS: 215-18	33-4	♦ Skin Corr. 1A, H314; Eye Dam. 1, H318; ♦ Acute Tox. 4, H302	
Reg.nr.: 01-211	9560576-31-XXXX	ATE: LD50 oral: 330 mg/kg	

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.

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 possible

after swallowing:

strong caustic effect.

absorption

after absorption of large amounts:

CNS disorders

ataxia (impaired locomotor coordination)

cramps

disorder of electrolyte balance

Danger

Danger of system failure.

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

#### **SECTION 5: Firefighting measures**

- · 5.1 Extinguishing media
- · Suitable extinguishing agents Use fire fighting measures that suit the environment.

(Contd. on page 3)

Printing date 17.04.2024 Version number 25 (replaces version 24) Revision: 17.04.2024

**Product name: Calcium Hardness** 

(Contd. of page 2)

#### · For safety reasons unsuitable extinguishing agents

Water

--> Aqueous solution reacts strongly alkaline.

If possible use dry extinguishing agents.

#### 5.2 Special hazards arising from the substance or mixture

mixture with combustible ingredients

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

Can be released in case of fire:

LiOx

Nitrogen oxides (NOx)

Carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>)

- 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.

Keep away from ignition sources

- · 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: Provide suction extractors if dust is formed.
- · Hygiene measures:

Do not inhale dust / smoke / mist.

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 oxidising agents.

Do not store together with acids.

#### Further information about storage conditions:

Store in cool, dry conditions in well sealed containers.

Protect from heat and direct sunlight.

Protect from the effects of light.

Protect from humidity and keep away from water.

This product is hygroscopic.

Recommended storage temperature: 20°C +/- 5°C

(Contd. on page 4)

Printing date 17.04.2024 Version number 25 (replaces version 24) Revision: 17.04.2024

**Product name: Calcium Hardness** 

(Contd. of page 3)

· 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: 9004-34-6 cellulose		
·	Short-term value: 20* mg/m³ Long-term value: 10* 4** mg/m³ *inhalable dust **respirable	
CAS: 1310-65-2 lithium hydroxide		
WEL (Great Britain) Short-term value: 1 mg/m³		

Regulatory information WEL (Great Britain): EH40/2020

· DNELs

Derived No Effect Level (DNEL)

Bolliod No Elliost Eovol (BNEE)		
CAS: 1310-65-2 lithium hydroxide		
DNEL	12.4 mg/kg /bw/d (Consumer / acute / systemic effects)	
	4.13 mg/kg /bw/d (Consumer / long-term / systemic effects)	
DNEL	100 mg/kg /bw/d (Worker / acute / systemic effects)	
	41.35 mg/kg /bw/d (Worker / long-term /systemic effects)	
	50 mg/kg /bw/d (Consumer / acute / systemic effects)	
	41.35 mg/kg /bw/d (Consumer / long-term / systemic effects)	
DNEL	30 mg/m³ (Worker / acute / systemic effects)	
	10 mg/m³ (Worker / long-term /systemic effects)	
	18.63 mg/m³ (Consumer / acute / systemic effects)	
	6.21 mg/m³ (Consumer / long-term / systemic effects)	
	D-65-2 DNEL	

#### Recommended monitoring procedures:

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

#### · PNECs

Predicted No Effect Concentration (PNEC)

CAS: 1	CAS: 1310-65-2 lithium hydroxide		
PNEC	79.2 mg/l (Sewage treatment plant)		
	0.23 mg/l (Marine water)		
	2.3 mg/l (Fresh water)		
PNEC	0.45 mg/kg (Soil)		
	0.9 mg/kg (Marine sediment)		
	9 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.

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

Printing date 17.04.2024 Version number 25 (replaces version 24) Revision: 17.04.2024

**Product name: Calcium Hardness** 

(Contd. of page 4)

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 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 Solid. · Form: **Tablets** · Colour: Pink · Odour: Odourless · Odour threshold: Not applicable. Melting point/Freezing point: Not determined. · Boiling point or initial boiling point and boiling range Not determined.

Flammability mixture with combustible ingredients

The product is not capable of dust explosion in the form supplied; · Explosive properties:

enrichment with fine dust causes risk of dust explosion

· Lower and upper explosion limit

Lower: Not determined. Upper: Not applicable (solid). Not applicable. · Flash point: · Auto-ignition temperature: Not applicable (solid). · Decomposition temperature: Not determined. 11.5

· pH (0.73 g/l) at 20°C

Kinematic viscosity Not applicable (solid).

· Solubility

· Water: Partly soluble

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

· Vapour pressure:

Density and/or relative density · Density:

Not determined. 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 Dust 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

Aqueous solution reacts alkaline.

Aqueous solution reacts with metals.

Reacts with light alloys in the presence of moisture to form hydrogen

Corrodes aluminium

Reacts with acids

Reacts with strong oxidizing agents

--> forms heat

(Contd. on page 6)

Printing date 17.04.2024 Version number 25 (replaces version 24) Revision: 17.04.2024

**Product name: Calcium Hardness** 

(Contd. of page 5)

· 10.4 Conditions to avoid

Exposure to moisture.

Strong heating (decomposition)

- · 10.5 Incompatible materials: aluminium, copper, zinc, metal ions organic substances
- 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 v	LD/LC50 values that are relevant for classification:		
CAS: 131	0-65-2 lithium hydroxide		
Oral	LD50	330 mg/kg (ATE) (Registrant, ECHA) Acute toxicity data are available for oral route of exposure: LD50 (rat, oral): female: 210 mg/kg bw; male: 280 mg/kg bw, both for lithium hydroxide anhydrous. As these values are most likely linked to local tissue damage due to the corrosiveness of the substance and are not only a result of "primary" systemic toxicity the LD50 oral of lithium chloride and lithium carbonate were taken into account after conversion. A LD50 value of 330 mg/kg bw were found to reflect properly the systemic toxicity of the corrosive substance lithium hydroxide anhydrous.	
Dermal	LD50.	>2000 mg/kg /bw (rat) (Registrant, ECHA)	
Inhalative		>3.4 mg/l /4h (rat) (Registrant, ECHA) 13.9–84.8 mg/kg /bw/d (rat) (Registrant, ECHA: oral)	

- · 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.
- · Additional toxicological information:

The following applies to lithium compounds in general:

after absorption: CNS disorders, ataxia (impaired locomotor coordination) due to disturbed electrolyte balance Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

- · 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.

- GB

Printing date 17.04.2024 Version number 25 (replaces version 24) Revision: 17.04.2024

**Product name: Calcium Hardness** 

(Contd. of page 6)

#### **SECTION 12: Ecological information**

#### · 12.1 Toxicity

· Aquatic toxicity:						
	CAS: 1310-65-2 lithium hydroxide					
EC50	19.1 mg/l/48h (Daphnia magna)	l				
	without pH-adjustment					
NOEC	5.71 mg/l/72h (Pseudokirchneriella subcapitata)					
	9.9 mg/l /34d (zebrafish)					
	2.3 mg/l /21d (Daphnia magna)					
EC50	87.57 mg/l/72h (Pseudokirchneriella subcapitata)					
LC50	62.2 mg/l/96h (zebrafish)					

#### Other information:

The following applies for lithium compounds in general:

fish toxic from 100 mg/l, Daphnia toxic from 16 mg/l, plants toxic from 0,2 mg/l

- · 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 product to reach ground water, water bodies or sewage system.

Danger to drinking water if even small quantities leak into soil.

#### **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	UN2680
· 14.2 UN proper shipping name · ADR · IMDG, IATA	2680 LITHIUM HYDROXIDE mixture LITHIUM HYDROXIDE mixture
· 14.3 Transport hazard class(es)	

· ADR



Class 8 (C6) Corrosive substances.

Printing date 17.04.2024 Version number 25 (replaces version 24) Revision: 17.04.2024

**Product name: Calcium Hardness** 

(Contd. of page 7)

· Label

· IMDG, IATA



· Class 8 Corrosive substances.

· Label 8

· 14.4 Packing group

· ADR, IMDG, IATA Ш

· 14.5 Environmental hazards: Not applicable.

· 14.6 Special precautions for user Warning: Corrosive substances.

· Kemler Number: 80 · EMS Number: F-A,S-B Segregation groups (SGG18) Alkalis Stowage Category

· 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) 1 kg Excepted quantities (EQ) Code: E2

Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g

· Transport category Tunnel restriction code Ε

· IMDG

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

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

#### **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

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.

(Contd. on page 9)

Printing date 17.04.2024 Version number 25 (replaces version 24) Revision: 17.04.2024

**Product name: Calcium Hardness** 

(Contd. of page 8)

#### 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.
- · 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

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

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

#### 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

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)

PNEC: Predicted No-Effect Concentration (ÚK 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

ATE: Acute toxicity estimate values

Acute Tox. 4: Acute toxicity – Category 4 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

\* Data compared to the previous version altered.