

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

Printing date 25.06.2014

Version number 21

Revision: 25.06.2014

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

- **1.1 Product identifier**
- **Product name:** **Calcium Hardness**
- **Catalog number:** 00515199, (4)515190(BT), (4)515191(BT), 515193, 505191
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation:** Reagent for water analysis
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **1.4 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

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.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



C; Corrosive

R35: Causes severe burns.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms** GHS05, GHS07
- **Signal word** Danger
- **Hazard-determining components of labelling:**
lithium hydroxide
disodium dihydrogenethylenediaminetetraacetate
- **Hazard statements**
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
- **Precautionary statements**
P261 Avoid breathing dust.

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 25.06.2014

Version number 21

Revision: 25.06.2014

Product name: Calcium Hardness

(Contd. of page 1)

- P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
 P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/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.

* 3 Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of organic and inorganic compounds

- **Dangerous components:**

| | | |
|-------------------------------------|--|--------|
| CAS: 1310-65-2 EINECS: 215-183-4 | lithium hydroxide C R35; Xn R22 Acute Tox. 3, H301; Acute Tox. 3, H331; Skin Corr. 1A, H314 | 10-20% |
| CAS: 139-33-3 EINECS: 205-358-3 | disodium dihydrogenethylenediaminetetraacetate Xn R20 Acute Tox. 4, H302; Acute Tox. 4, H332 | 5-10% |

- **REACH - Pre-registered substances** All components are REACH pre-registered.
- **Additional information** For the wording of the listed risk phrases refer to section 16.

* 4 First aid measures

- **4.1 Description of first aid measures**
- **General information**
Personal protection for the First Aider!
Instantly remove any clothing soiled by the product.
- **After inhalation**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness bring patient into stable side position for transport.
- **After skin contact**
Wash with polyethylene glycol 400 and then rinse with copious amounts of 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 10 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:**
after inhalation:
coughing
breathing difficulty
after swallowing:
pain
strong caustic effect.
damage to the affected mucous membranes
cramps
- **Danger**
Danger of gastric perforation.
Danger of impaired breathing.
- **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

* 5 Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents**
Water.

(Contd. on page 3)

GB

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 25.06.2014

Version number 21

Revision: 25.06.2014

Product name: Calcium Hardness

(Contd. of page 2)

--> Aqueous solution reacts strongly alkaline. If possible use dry extinguishing agents.

5.2 Special hazards arising from the substance or mixture

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

Nitrogen oxides (NO_x)

LiOx

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.

* 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Keep away from ignition sources

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:

Dispose of contaminated material as waste according to item 13.

Collect mechanically.

Ensure adequate ventilation.

6.4 Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

* 7 Handling and storage

7.1 Precautions for safe handling Open and handle container with care.

Information about protection against explosions and fires: The product is not flammable

7.2 Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and containers: Store in cool location.

Information about storage in one common storage facility:

Do not store together with acids.

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Protect from heat and direct sunlight.

Store under dry conditions.

Protect from humidity and keep away from water.

This product is hygroscopic.

Protect from the effects of light.

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

Storage class 8 B

7.3 Specific end use(s) No further relevant information available.

* 8 Exposure controls/personal protection

Additional information about design of technical systems: No further data; see item 7.

8.1 Control parameters
Components with limit values that require monitoring at the workplace:
9004-34-6 cellulose (80-90%)

| | |
|---------------------|---|
| WEL (Great Britain) | Short-term value: 20* mg/m ³ Long-term value: 10* 4** mg/m ³ *inhalable dust **respirable |
|---------------------|---|

(Contd. on page 4)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 25.06.2014

Version number 21

Revision: 25.06.2014

Product name: Calcium Hardness

(Contd. of page 3)

| | | |
|--|--|-------------------------------|
| 1310-65-2 lithium hydroxide (10-20%) | | |
| WEL (Great Britain) | Short-term value: 1 mg/m ³ | |
| OEL (Sweden) | Long-term value: 0.02 mg/m ³ som Li; inhalerbar damm | |
| · DNELs | | |
| 139-33-3 disodium dihydrogenethylenediaminetetraacetate | | |
| Inhalative | Consumer DNEL / longterm / Systemic effects | 1.5 mg/m ³ (human) |
| | Worker DNEL / longterm / Systemic effects | 2.5 mg/m ³ (human) |

· **Additional information:** The lists that were valid during the compilation were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment**

· **General protective and hygienic measures**

Take off immediately all contaminated clothing
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes and skin.
Do not eat, drink or smoke while working.

· **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.

· **Recommended filter device for short term use:** Filter P2

· **Protection of hands:**

Alkaline resistant gloves
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**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level = 1 (< 10 min)

· **Eye protection:** Tightly sealed safety glasses.

· **Body protection:** Alkaline resistant protective clothing

* 9 Physical and chemical properties

| | |
|--|--|
| · 9.1 Information on basic physical and chemical properties | |
| · Appearance: | |
| Form: | Tablets |
| Colour: | Beige |
| · Odour: | Odourless |
| · pH-value (0.73 g/l) at 20 °C: | 11.5 |
| · Melting point/Melting range: | Not determined |
| · Boiling point/Boiling range: | 925 °C |
| · Flash point: | Not applicable |
| · Danger of explosion: | Product is not explosive. |
| · Density | Not determined |
| · Vapour density | Not applicable. |
| · Evaporation rate | Not applicable. |
| · Solubility in / Miscibility with | |
| Water: | Partly soluble |
| · Solvent content: | |
| Organic solvents: | 0.0 % |
| Solids content: | 100.0 % |
| · 9.2 Other information | No further relevant information available. |

GB
(Contd. on page 5)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 25.06.2014

Version number 21

Revision: 25.06.2014

Product name: Calcium Hardness

(Contd. of page 4)

*10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions**
 - Reacts with water
 - > forms heat
 - Aqueous solution reacts alkaline.
 - Reacts with metals to form nitrous fumes and hydrogen
 - Corrosive action on metals
 - Corrodes aluminium
 - Reacts with organic substances
 - Reacts with light alloys to form hydrogen
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - organic substances
 - acids
 - oxidizing agents
- **Hazardous decomposition products:**
 - Hydrogen
 - see chapter 5

*11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
 - Quantitative data on the toxicity of the preparation are not available.
 - The following statements refer to the individual components.

- **LD/LC50 values that are relevant for classification:**

| | | |
|------------|----------------------|------------------|
| Oral | ATE _(MIX) | 1575 mg/kg (.) |
| Inhalative | ATE _(MIX) | 5.98 mg/l/4h (.) |

1310-65-2 lithium hydroxide

| | | |
|------------|------|--------------------------------|
| Oral | LD50 | 210 mg/kg (rat) |
| Inhalative | LC50 | 0.96 mg/l/4h (rat) (GESTIS) |

139-33-3 disodium dihydrogenethylenediaminetetraacetate

| | | |
|------------|------|------------------------------|
| Oral | LD50 | 2000 mg/kg (rat) (GESTIS) |
| Inhalative | LC50 | 1.5 mg/l/4h (ATE) |

- **Primary irritant effect:**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:** strong caustic effect.
- **Sensitization:** No sensitizing effect known.
- **Subacute to chronic toxicity:**
 - CAS-No. 1310-65-2:
 - chronic: central nervous system effects
- **Experience with humans:** Can cause kidney damages.
- **Additional toxicological information:**
 - Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
 - The following applies to lithium compounds in general:
 - after absorption: CNS disorders, ataxia (impaired locomotor coordination) due to disturbed electrolyte balance
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available

GB
(Contd. on page 6)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 25.06.2014

Version number 21

Revision: 25.06.2014

Product name: **Calcium Hardness**

(Contd. of page 5)

* 12 Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

139-33-3 disodium dihydrogenethylenediaminetetraacetate

| | |
|------|--|
| EC50 | > 100 mg/l/48h (Daphnia magna) (BASF) |
|------|--|

· **12.2 Persistence and degradability** No further relevant information available.

· **Other information:** Quantitative data on the ecological effect of this product are not available.

· **12.3 Bioaccumulative potential** No further relevant information available.

· Behaviour in environmental systems:

139-33-3 disodium dihydrogenethylenediaminetetraacetate

| | |
|------------|--------------------|
| log P(o/w) | -4.3 (.) (BASF) |
|------------|--------------------|

· **12.4 Mobility in soil** No further relevant information available.

· Ecotoxicological effects:

· Remark:

Harmful effect due to pH shift.

Forms corrosive mixtures with water even if diluted.

· Algae toxicity:

139-33-3 disodium dihydrogenethylenediaminetetraacetate

| | |
|------|--|
| EC50 | >100 mg/l/72 h (Scenedesmus subspicatus) (BASF) |
|------|--|

· Additional ecological information:

The following applies to lithium compounds in general:

MERCK - biological effects:

fish toxic from 100 mg/l up

Daphnia toxic from 16 mg/ up

plants toxic from 0.2 mg/l up (value calculated as Li)

· COD-value:

139-33-3 disodium dihydrogenethylenediaminetetraacetate

| | |
|-----|--------------|
| COD | 0.59 g/g (.) |
|-----|--------------|

· General notes:

Water hazard class 2 (German Regulation) (Self-assessment acc. VwVwS Annex 4): hazardous for water.

Do not allow product to reach ground water, water bodies or sewage system.

Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms.

· **12.5 Results of PBT and vPvB assessment** no data available

· **vPvB assessments:** no data available

· **12.6 Other adverse effects** No further relevant information available.

* 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 dangerous 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.

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 25.06.2014



Version number 21

Revision: 25.06.2014

Product name: **Calcium Hardness**

(Contd. of page 6)

* 14 Transport information

| | |
|--|---|
| · 14.1 UN-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 · Label | 8 (C6) Corrosive substances. 8 |
| · IMDG, IATA | |
|  | |
| · Class · Label | 8 Corrosive substances. 8 |
| · 14.4 Packing group · ADR, IMDG, IATA | II |
| · 14.5 Environmental hazards: · Marine pollutant: | No |
| · 14.6 Special precautions for user · Kemler Number: · EMS Number: · Segregation groups | Warning: Corrosive substances. 80 F-A,S-B Alkalis |
| · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · Transport/Additional information: | |
| · ADR · Limited quantities (LQ) · Transport category · Tunnel restriction code | 1 kg 2 E |

* 15 Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Information about limitation of use: Employment restrictions concerning young persons must be observed.
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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.

- Relevant phrases
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H331 Toxic if inhaled.
H332 Harmful if inhaled.

(Contd. on page 8)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 25.06.2014

Version number 21

Revision: 25.06.2014

Product name: Calcium Hardness

(Contd. of page 7)

R20 Harmful by inhalation.
R22 Harmful if swallowed.
R35 Causes severe burns.

· **Recommended restriction of use:** professional/industrial use only

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
EC50: effective concentration, 50 percent (in vivo)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized 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 (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Acute Tox. 3: Acute toxicity, Hazard Category 3
Acute Tox. 4: Acute toxicity, Hazard Category 4
Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

· **Sources**

GESTIS-Stoffdatenbank
Data arise from reference works and literature.

· * **Data compared to the previous version altered.**

GB