Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 06/11/2019 Reviewed on 06/11/2019

* 1 Identification

· **Product identifier**

· **Trade name: Total Hardness**

· **Catalogue number:** 00515161, 515160BT, 515161BT, 503551, 00515169BT, 4515160BT, 4515161BT

· **Application of the substance / the mixture:** Reagent for water analysis

· **Manufacturer/Supplier:**
Tintometer Inc.
6456 Parkland Drive
Sarasota, FL 34243
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.lovibond.us
Made in Germany

· **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

2 Hazard(s) identification

· **Classification of the substance or mixture**


GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.


GHS07

Skin Irrit. 2 H315 Causes skin irritation.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Hazard Communication Standard (HCS).
· **Hazard pictograms**


GHS05

· **Signal word** Danger
· **Hazard-determining components of labeling:**
lithium hydroxide
· **Hazard statements**
H315 Causes skin irritation.
H318 Causes serious eye damage.
· **Precautionary statements**

P280	Wear protective gloves / eye protection.
P302+P352	If on skin: Wash with plenty of water.
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.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

· **Other hazards** No further relevant information available.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 06/11/2019 Reviewed on 06/11/2019

Trade name: Total Hardness

(Contd. of page 1)

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of organic and inorganic compounds
· **Composition and Information on Ingredients:**
Percent ranges are used due to the confidential product information.

CAS: 9004-34-6 EINECS: 232-674-9 RTECS: FJ5691460	cellulose		60–70%
CAS: 1310-65-2 EINECS: 215-183-4	lithium hydroxide	Acute Tox. 3, H301; Skin Corr. 1A, H314; Eye Dam. 1, H318	3–<5%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:**
Immediately rinse with plenty of water.
If skin irritation continues, consult a doctor.
· **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.
If symptoms persist consult doctor.
· **Most important symptoms and effects, both acute and delayed**
burns
Irritation and corrosion
mucosal irritations, cough, breathing difficulty
cramps
after swallowing of large amounts:
after inhalation:
mucous membrane irritation
coughing
breathing difficulty
after absorption of large amounts:
resorption
CNS disorders
ataxia (impaired locomotor coordination)
disorder of electrolyte balance
irritations
· **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture**
Can burn in fire.
Formation of toxic gases is possible during heating or in case of fire.
nitrous gases
Nitrogen oxides (NOx)
LiOx
Carbon monoxide (CO) and carbon dioxide (CO_2)
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 06/11/2019 Reviewed on 06/11/2019

Trade name: Total Hardness

(Contd. of page 2)

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
· **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources
· **Advice for emergency responders:** Protective equipment: see section 8
· **Environmental precautions:** Do not allow product to reach sewage system or any water course.
· **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Pick up mechanically.
Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Precautions for safe handling**
· **Advice on safe handling:** Prevent formation of dust.
· **Hygiene measures:**
Avoid contact with the skin.
Avoid contact with the eyes.
Take off immediately all contaminated clothing.
Wash hands before breaks and at the end of work.
Do not eat, drink or smoke when using this product.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:** Store away from oxidizing agents.
· **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
Protect from exposure to the light.
Protect from humidity and water.
This product is hygroscopic.
· **Recommended storage temperature:** 20°C +/- 5°C (approx. 68°F)
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
CAS: 9004-34-6 cellulose	
PEL (USA)	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction
TLV (USA)	Long-term value: 10 mg/m³
EL (Canada)	Long-term value: 10* 3** mg/m³ *total dust, **respirable fraction
EV (Canada)	Long-term value: 10 mg/m³ paper fibre, total dust

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 06/11/2019 Reviewed on 06/11/2019

Trade name: Total Hardness

(Contd. of page 3)

CAS: 1310-65-2 lithium hydroxide	
WEEL (USA)	Ceiling limit value: 1 mg/m³
EL (Canada)	Ceiling limit value: 1 mg/m³
EV (Canada)	Short-term value: 1 mg/m³ anyhydrous

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

· **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.
See item 7.

· **Personal protective equipment:**
· **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.
· **Recommended filter device for short term use:** Filter P2
· **Protection of hands:**
Protective gloves
Check protective gloves prior to each use for their proper condition.
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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Tightly sealed goggles
· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment:**
Do not allow product to reach sewage system or any water course.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **Appearance:**	
Form / Physical state:	Tablets
Color:	Grey
· **Odor:**	Odorless
· **Odor threshold:**	Not applicable.
· **pH-value (7.4 g/l) at 20°C (68°F):**	9.9
· **Melting point/freezing point:**	Not determined.
· **Initial boiling point and boiling range:**	Not determined.
· **Flash point:**	>100°C (>212°F)
· **Flammability (solid, gas):**	Not determined.
· **Decomposition temperature:**	Not determined.
· **Auto-ignition temperature:**	Product is not self-igniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Flammability or explosive limits:**	
Lower:	Not applicable.
Upper:	Not applicable.
· **Oxidizing properties:**	none
· **Vapor Pressure:**	Not applicable.
· **Density:**	Not determined.
· **Relative density:**	Not determined.
· **Vapor density:**	Not applicable.
· **Evaporation rate:**	Not applicable.
· **Solubility(ies)**	
Water:	Partly soluble.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 06/11/2019 Reviewed on 06/11/2019

Trade name: Total Hardness

(Contd. of page 4)

· **Partition coefficient (n-octanol/water):**	Not applicable.
· **Viscosity:**	Not applicable.
· **Solvent content:**	
Organic solvents:	0.0 %
Solids content:	100 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** see section "Possibility of hazardous reactions"
· **Chemical stability** Stable at ambient temperature (room temperature).
· **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 and zinc.
Reacts with alkali (lyes).
Reacts with oxidizing agents.
Reacts with strong oxidizing agents.
· **Conditions to avoid** Strong heating (decomposition)
· **Incompatible materials:**
aluminum, copper, zinc, metal ions
organic substances
· **Hazardous decomposition products:** see section 5

* 11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:** Based on available data, the classification criteria are not met.

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

CAS: 9004-34-6 cellulose		
Oral	LD50.	>5000 mg/kg (rat)
Dermal	LD50.	>2000 mg/kg (rabbit) (RTECS, limit test)
Inhalative	LC50.	>5.8 mg/l/4h (rat) (RTECS, limit test)
CAS: 1310-65-2 lithium hydroxide		
Oral	LD50	210 mg/kg (rat) (RTECS)
	LC50.	>3.4 mg/l/4h (rat) (Registrant, ECHA: no mortality at this concentration)

· **Primary irritant effect:**
· **on the skin:** Causes skin irritation.
· **on the eye:**
Causes serious eye damage.
Risk of corneal clouding.

· **Information on components:**

CAS: 9004-34-6 cellulose		
Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: no irritation)

· **Sensitization:** Based on available data, the classification criteria are not met.

· **Information on components:**

CAS: 9004-34-6 cellulose		
Sensitization	OECD 406	(guinea pig: negative)

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 06/11/2019 Reviewed on 06/11/2019

Trade name: Total Hardness

(Contd. of page 5)

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**	
CAS: 999-99-9	one or more ingredient(s) Group 3: Not classifiable as to carcinogenicity to humans

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Other information:** see section 8 / 15

· **Synergistic Products:** None

· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):** The following statements refer to the mixture:
· **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
· **Experience with humans:**
CAS 1310-65-2: Can cause liver damage.
CAS 1310-65-2: Can cause kidney damages.
CAS 1310-65-2: May cause lung damages.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **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
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Other adverse effects** Avoid transfer into the environment.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to hazardous waste disposers.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**	
· **DOT, IMDG, IATA**	none
· **UN proper shipping name**	
· **DOT, IMDG, IATA**	none

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 06/11/2019 Reviewed on 06/11/2019

Trade name: Total Hardness

(Contd. of page 6)

· **Transport hazard class(es)**	
· **DOT, IMDG, IATA**	
· **Class**	none
· **Packing group**	
· **DOT, IMDG, IATA**	none
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	Not dangerous according to the above specifications.

* 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (Extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):** All ingredients are listed.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **New Jersey Right-to-Know List:**
CAS: 9004-34-6 | cellulose

· **New Jersey Special Hazardous Substance List:**
None of the ingredients is listed.

· **Pennsylvania Right-to-Know List:**
CAS: 9004-34-6 | cellulose

· **Pennsylvania Special Hazardous Substance List:**
None of the ingredients is listed.

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 06/11/2019 Reviewed on 06/11/2019

Trade name: Total Hardness

(Contd. of page 7)

16 Other information

This information is based on our present knowledge. However, this 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.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

· **Date of preparation / last revision** 06/11/2019 / 32

· **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: hallf maximal inhibitory concentration
NOEL or NOEC: No Observed Effect Level or Concentration
ACGIH® - American Conference of Governmental Industrial Hygienists
•A1 - Confirmed human carcinogen
•A2 - Suspected human carcinogen
•A3 - Confirmed animal carcinogen with unknown relevance to humans
•A4 - Not classifiable as a human carcinogen
•A5 - Not suspected as a human carcinogen
IARC - International Agency for Research on Cancer
•Group 1 - Carcinogenic to humans
•Group 2A - Probably carcinogenic to humans
•Group 2B - Possibly carcinogenic to humans
•Group 3 - Not classifiable as to carcinogenicity to humans
•Group 4 - Probably not carcinogenic to humans
NTP - National Toxicology Program, U.S. Department of Health and Human Services
•Group K - Known to be Human Carcinogens
•Group R - Reasonably Anticipated to be Human Carcinogens
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
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
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 3: Acute toxicity – Category 3
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Skin Irrit. 2: Skin corrosion/irritation – Category 2
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
RTECS (Registry of Toxic Effects of Chemical Substances)

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