

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

Printing date 04/17/2024

Reviewed on 04/17/2024

1 Identification

- **Product identifier**
- **Trade name:** Calcheck
- **Catalogue number:** 00515651, 515650BT, 4515650BT, 515651BT, 4515651BT, 00515659
- **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**



GHS08 Health hazard

Toxic to Reproduction 1B H360 May damage fertility or the unborn child.



GHS07

Eye Irritation 2A H319 Causes serious eye irritation.

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



GHS07



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
disodium tetraborate, anhydrous
boric acid
- **Hazard statements**
H319 Causes serious eye irritation.
H360 May damage fertility or the unborn child.
- **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection.
P201 Obtain special instructions before use.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
- **Other hazards** No further relevant information available.

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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: 1330-43-4 EINECS: 215-540-4 Index number: 005-011-00-4 RTECS: ED4588000	disodium tetraborate, anhydrous ☠ Toxic to Reproduction 1B, H360; ⚠ Eye Irritation 2A, H319	10–20%
CAS: 10043-35-3 EINECS: 233-139-2 Index number: 005-007-00-2 RTECS: ED 4550000	boric acid ☠ Toxic to Reproduction 1B, H360	10–20%

- **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.
Seek medical treatment.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
Seek medical advice.
- **After eye contact:**
Rinse opened eye for several minutes (at least 15 min) under running water.
Seek immediate medical advice.
- **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
Seek medical treatment.
- **Most important symptoms and effects, both acute and delayed**
irritations
resorption
after swallowing:
sickness
vomiting
diarrhoea
after absorption of large amounts:
cardiovascular disorders
fatigue
CNS disorders
ataxia (impaired locomotor coordination)
cramps
- **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**
The product is not combustible.
Formation of toxic gases is possible during heating or in case of fire.
- **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.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

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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.
 - Avoid substance contact.
 - Ensure adequate ventilation
- **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 section 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:** Provide suction extractors if dust is formed.
- **Hygiene measures:**
 - Do not get in eyes, on skin, or on clothing.
 - Take off immediately all contaminated clothing.
 - Store protective clothing separately.
 - 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**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
 - Store locked up or with access restricted to technical experts or their assistants.
 - Ensure that persons do not handle until all safety precautions have been read and understood.
 - Protect from heat and direct sunlight.
 - Protect from exposure to the light.
 - Store in dry conditions.
 - Protect from humidity and water.
- **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: 1330-43-4 disodium tetraborate, anhydrous

REL (USA)	Long-term value: 1 mg/m ³ anhydrous
TLV (USA)	Short-term value: 6* mg/m ³ Long-term value: 2* mg/m ³ *as inhalable fraction, A4
EL (Canada)	Short-term value: 6 mg/m ³ Long-term value: 2 mg/m ³
EV (Canada)	Short-term value: 6 mg/m ³ Long-term value: 2 mg/m ³ inorganic, inhalable

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CAS: 10043-35-3 boric acid	
TLV (USA)	Short-term value: 6* mg/m ³ Long-term value: 2* mg/m ³ *as inhalable fraction, A4
EL (Canada)	Short-term value: 6 mg/m ³ Long-term value: 2 mg/m ³
EV (Canada)	Short-term value: 6 mg/m ³ Long-term value: 2 mg/m ³ inorganic, inhalable

- **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:**
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.
- **Breathing equipment:** Use respiratory protective device against the effects of fume/dust/aerosol.
- **Recommended filter device for short term use:** Filter P3
- **Protection of hands:**
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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**
Safety glasses
Use protective goggles that have been tested and approved in accordance with government standards (like NIOSH).
- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment:** Avoid release to the environment.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **Appearance:**
- **Form / Physical state:** Tablets
- **Color:** Violet
- **Odor:** Odorless
- **Odor threshold:** Not applicable.
- **pH-value (9 g/l) at 20°C (68°F):** 8.5
- **Melting point/freezing point:** Not determined.
- **Initial boiling point and boiling range:** Not determined.
- **Flash point:** Not applicable.
- **Flammability (solid, gas):** The product is not combustible.
- **Auto igniting:** Not applicable (solid).
- **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.

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· Solubility(ies)	
· Water:	Soluble.
· Partition coefficient (n-octanol/water):	Not applicable.
· Viscosity:	Not applicable.
· Kinematic:	Not applicable (solid).
· Other information	
· Solids content:	100 %

10 Stability and reactivity

- **Reactivity** see section "Possibility of hazardous reactions"
- **Chemical stability** Stable at ambient temperature (room temperature).
- **Possibility of hazardous reactions**
Reacts with acids, alkalis and oxidizing agents.
--> Forms heat.
If moisture is present, boric acid can be corrosive to iron.
- **Conditions to avoid** To avoid thermal decomposition do not overheat.
- **Incompatible materials:** No further relevant information available.
- **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: 10043-35-3 boric acid		
Oral	LD50	2660 mg/kg (rat) (OECD 401) (GESTIS, ECHA registrant)
Dermal	LD50.	>2000 mg/kg (rat) (ECHA, registrant: no deaths occurred.)
	LD ₀	1500 mg/kg (child) (MERCK)
	NOAEL	9.6 mg/kg (rat) (NTP)

- **Primary irritant effect:**
- **on the skin:** Based on available data, the classification criteria are not met.
- **on the eye:** Causes serious eye irritation.

· Information on components:		
CAS: 1330-43-4 disodium tetraborate, anhydrous		
Irritation of skin	OECD 404	(rabbit: no irritation) (Registrant, ECHA, Sodium tetraborate pentahydrate)
Irritation of eyes	OECD 492	(rabbit: irritation) (Registrant, ECHA, Sodium tetraborate pentahydrate)
CAS: 10043-35-3 boric acid		
Irritation of skin	OECD 404	(rabbit: no irritation) (Registrant, ECHA)
Irritation of eyes	OECD 492	(rabbit: slight irritation) (IUCLID)

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

· Information on components:		
CAS: 10043-35-3 boric acid		
Sensitization	OECD 406	(guinea pig: negative)

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· **Carcinogenic categories**· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **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 (carcinogenicity, mutagenicity and toxicity for reproduction):**

The following statements refer to the mixture:

Toxic to Reproduction 1B

· **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** May damage fertility or the unborn child.· **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 components:**

CAS 10043-35-3: evaluation for carcinogenicity: negative in animals (NTP)

CAS 1330-43-4 Borax:

Reproductive Toxicity:

Numerous studies on different species have been carried out with boric acid and borates. From this it was concluded that reproductive toxicity appears to be the critical effect.

mutagenicity:

Borates and boric acid did not show any genotoxic effects in a series of microbiological investigations and tests on cell preparations that have been carried out to date, as well as in an in-vivo test.

Carcinogenicity:

A previous carcinogenicity study on rats and mice with boric acid (oral application) gave no indication of a carcinogenic potential of boric acid or borates.

OECD 414: Teratogenicity testing

OECD 473: Mutagenicity testing

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

CAS: 10043-35-3 boric acid

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

OECD 476 (negative) (In Vitro Mammalian Cell Gene Mutation Test)
(mouse lymphomea test)

OECD 414 (negative) (oral, rat)

(ECHA, registrant: no evidence of developmental toxicity up to 55 mg/kg bw. At 76 mg/kg bw there was reduced fetal bodyweight, short and wavy ribs, and these effects disappeared during the postnatal period.)

OECD 474 (negative) (in vivo, mice)

· **Additional toxicological information:**

CAS 1330-43-4: Absorption through gastro-intestinal tract, mucous membranes

Boric acid / Borate may cause developmental changes based on published data, at doses many times in excess of those that could occur through inhalation of dust in occupational settings.

CAS: 10043-35-3 boric acid

(source: GESTIS)

Main toxic effects:

Acute: Slightly irritating to the eyes and skin; gastrointestinal disturbances, CNS-effects and (later) skin damage after massive poisoning

Chronic: Irritation to the mucous membranes following inhalative exposure, effects to the gastrointestinal tract and CNS

Further Information (Merck):

"Toxicity reported for borates in humans: ingestion or absorption may cause nausea, vomiting, diarrhea, abdominal cramps, and erythematous lesions on the skin and mucous membranes.

Other symptoms include: circulatory collapse, tachycardia, cyanosis, delirium, convulsions, and coma.

Death has been reported to occur in infants from less than 5 grams and in adults from 5 to 20 grams."

"Liver - Irregularities - Based on Human Evidence"

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· **Other information** Other dangerous properties can not be excluded.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

CAS: 1330-43-4 disodium tetraborate, anhydrous

LC50 1085–1402 mg/l/48h (Daphnia magna)
(IUCLID)

IC50 158 mg/l/96 h (Desmodesmus subspicatus)
(IUCLID)

LC50 340 mg/l/96h (fish)
(IUCLID)

CAS: 10043-35-3 boric acid

EC50 133 mg/l/48h (Daphnia magna)
(ECOTOX)

LC50 50–100 mg/l/96h (rainbow trout)
(ECOTOX)

· **Bacterial toxicity:**

CAS: 1330-43-4 disodium tetraborate, anhydrous

EC5 1.3 mg/l (Entosiphon sulcatum) (72h)

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

· **Bioaccumulative potential**

Pow = n-octanol/wasser partition coefficient

log Pow < 1 = Does not accumulate in organisms.

CAS: 10043-35-3 boric acid

log Pow -1.09 (.) (OECD 107, 22°C)
(Merck)

· **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

· **Transport hazard class(es)**

· **DOT, IMDG, IATA**

· **Class**

none

· **Packing group**

· **DOT, IMDG, IATA**

none

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· Environmental hazards:	
· Marine pollutant:	No
· 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 components have the value ACTIVE.

· 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:

CAS: 3051-09-0 | Murexide

· New Jersey Right-to-Know List:

None of the ingredients is listed.

· New Jersey Special Hazardous Substance List:

None of the ingredients is listed.

· Pennsylvania Right-to-Know List:

CAS: 1330-43-4 | disodium tetraborate, anhydrous

· Pennsylvania Special Hazardous Substance List:

None of the ingredients is listed.

· EPA (Environmental Protection Agency)

CAS: 1330-43-4 | disodium tetraborate, anhydrous

I (oral)

CAS: 10043-35-3 | boric acid

I (oral)

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· Information about limitation of use:

Observe national regulations where applicable:

Employment restrictions concerning young persons must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

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

* 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.

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· Relevant phrases

H319 Causes serious eye irritation.
H360 May damage fertility or the unborn child.

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

· **Version number / date of revision:** 32 / 04/17/2024

· Abbreviations and acronyms:

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organisation

ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)

EC50: effective concentration, 50 percent (in vivo)

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

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

Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

Toxic to Reproduction 1B: Reproductive toxicity – Category 1B

· Sources

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

RTECS (Registry of Toxic Effects of Chemical Substances)

ECOTOX Database

IUCLID (International Uniform Chemical Information Database)

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

NTP (National Toxicology Program)

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