

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

Printing date 04.07.2016

Version number 27

Revision: 04.07.2016

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

##### 1.1 Product identifier

Product name: **Calcheck**

Catalog number: 00515659, (4)515650(BT), (4)515651(BT), 515653(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  
Schleefstr. 8-12  
DE-44287 Dortmund  
Made in Germany  
www.lovibond.com

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

##### 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  
Languages: English and German

#### SECTION 2: Hazards identification

##### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS08 health hazard

Repr. 1B H360FD May damage fertility. May damage the unborn child.

##### 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



GHS08

Signal word Danger

##### Hazard-determining components of labelling:

boric acid  
disodium tetraborate, anhydrous

##### Hazard statements

H360FD May damage fertility. May damage the unborn child.

##### Precautionary statements

P281 Use personal protective equipment as required.  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P308+P313 IF exposed or concerned: Get medical advice/attention.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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**Additional information:**

Restricted to professional users.

- **2.3 Other hazards** No further relevant information available.

- **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.



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### \* SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**

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

- **Dangerous components:**

CAS: 1330-43-4 EINECS: 215-540-4 Index No: 005-011-00-4 Reg.nr.: 01-2119490790-32-XXXX	disodium tetraborate, anhydrous	 Repr. 1B, H360FD	10-20%
CAS: 10043-35-3 EINECS: 233-139-2 Index No: 005-007-00-2 Reg.nr.: 01-2119486683-25-XXXX	boric acid	 Repr. 1B, H360FD	10-20%

- **SVHC**

CAS: 10043-35-3	boric acid
CAS: 1330-43-4	disodium tetraborate, anhydrous

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

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### \* 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.

Seek medical treatment.

- **After skin contact**

Instantly wash with water and soap and rinse thoroughly.

Seek immediate 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.

- **4.2 Most important symptoms and effects, both acute and delayed:**

sickness

vomiting

irritations

after absorption:

absorption

CNS disorders

cardiovascular disorders

cramps

- **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

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### 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**

The product is not combustible.

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

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- **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.
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### \* 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
  - **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 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.
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### \* SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
  - **Advice on safe handling:**  
Open and handle container with care.  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of dust.
  - **Hygiene measures:**  
Do not get in eyes, on skin, or on clothing.  
Take off immediately all contaminated clothing.  
Store protective clothing separately.  
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**
  - **Storage**
  - **Requirements to be met by storerooms and containers:** Store in cool location.
  - **Storage class** 6.1 D
  - **Further information about storage conditions:**  
Store in a locked cabinet or with access restricted to technical experts or their assistants.  
Protect from heat and direct sunlight.  
Protect from the effects of light.  
Store under dry conditions.  
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.
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### \* SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**

- **Components with limit values that require monitoring at the workplace:**

<b>CAS: 1330-43-4 disodium tetraborate, anhydrous (10-20%)</b>
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WEL (Great Britain) Long-term value: 1 mg/m <sup>3</sup>
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- **DNELs**

Derived No Effect Level (DNEL)

CAS: 10043-35-3 boric acid		
Oral	DNEL	0.98 mg/kg (Consumer / acute / systemic effects)
		0.98 mg/kg (Consumer / long-term / systemic effects)
Dermal	DNEL	392 mg/kg (Worker / long-term /systemic effects)
		196 mg/kg (Consumer / long-term / systemic effects)
Inhalative	DNEL	8.3 mg/m <sup>3</sup> (Worker / long-term /systemic effects)
		4.15 mg/m <sup>3</sup> (VLI)

- **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: 10043-35-3 boric acid	
PNEC	10 mg/l (Sewage treatment plant)
	2.02 mg/l (Marine water)
	13.7 mg/l (Aquatic intermittent release)
	2.02 mg/l (Fresh water)
PNEC	5.4 mg/kg (Soil)

- **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.

- **Personal protective equipment**

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

- **Recommended filter device for short term use:** Filter P3

- **Protection of hands:**

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:  $\geq 0.11$  mm

- **Penetration time of glove material**

Value for the permeation: Level = 1 ( &lt; 10 min )

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

- **Eye protection:**

Safety glasses

use against the effects of fumes / dust

- **Body protection:** Protective work clothing.

- **Limitation and supervision of exposure into the environment:** Avoid release to the environment.

## SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **Appearance:**

Form / Physical state: Tablets

Colour: Pink

- **Odour:** Odourless

- **Odour threshold:** Not applicable

- **pH-value at 20 °C:** 8.5

- **Melting point/Freezing point:** Not determined

- **Initial boiling point and boiling range:** 300 °C

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· <b>Flash point:</b>	Not applicable
· <b>Flammability (solid, gas):</b>	Not applicable.
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto-ignition temperature:</b>	Product is not self-igniting.
· <b>Explosive properties:</b>	Product is not explosive.
· <b>Flammability or explosive limits:</b>	
<b>Lower:</b>	Not applicable
<b>Upper:</b>	Not applicable
· <b>Oxidising properties:</b>	none
· <b>Vapour pressure at 20 °C:</b>	2.7 hPa
	Not applicable.
· <b>Density:</b>	Not determined
· <b>Relative density:</b>	Not determined.
· <b>Vapour density:</b>	Not applicable.
· <b>Evaporation rate:</b>	Not applicable.
· <b>Solubility(ies):</b>	
<b>Water:</b>	Soluble
· <b>Partition coefficient (n-octanol/water):</b>	Not applicable.
· <b>Viscosity:</b>	Not applicable.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Solids content:</b>	100.0 %
· <b>9.2 Other information</b>	No further relevant information available.

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**  
Reacts with oxidizing agents  
--> forms heat
- **10.4 Conditions to avoid** To avoid thermal decomposition do not overheat.
- **10.5 Incompatible materials:**  
alkalis  
oxidizing agents
- **10.6 Hazardous decomposition products:** see section 5

### SECTION 11: Toxicological information

- **11.1 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 <sub>0</sub>	1500 mg/kg (child) (MERCK)
Inhalative	LC50.	> 2.03 mg/l/4h (rat) (OECD 403, aerosol) (ECHA, registrant: no deaths occurred)
	NOAEL	9.6 B mg/kg (rat) (NTP)

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

Oral	LD50	1200 mg/kg (rat) (RTECS, Merck)
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- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.

· **Information on components:****CAS: 10043-35-3 boric acid**

Irritation of skin	OECD 404	(rabbit: no irritation) (Registrant, ECHA)
Irritation of eyes	OECD 405	(rabbit: slight irritation) (IUCLID)

- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

· **Information on components:****CAS: 10043-35-3 boric acid**

Sensitisation	OECD 406	(guinea pig: negative)
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· **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

Product is suspected to cause injury to foetus.

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**  
May damage fertility. May damage 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 boric acid**

OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test)
OECD 476	(negative) (In Vitro Mammalian Cell Gene Mutation Test) (mouse lymphoma 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
- **Experience with humans:** CAS 10043-35-3 / 1330-43-4: Can cause kidney damages.

## SECTION 12: Ecological information

· **12.1 Toxicity**· **Aquatic toxicity:****CAS: 10043-35-3 boric acid**

EC50	133 mg/l/48h (Daphnia magna) (ECOTOX)
LC50	50 - 100 mg/l/96h (rainbow trout) (ECOTOX)

**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)

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

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- **12.3 Bioaccumulative potential**

Pow = n-octanol/wasser partition coefficient  
log Pow < 1 = Does not accumulate in organisms.

<b>CAS: 10043-35-3 boric acid</b>	
log Pow	-1.09 (.) (OECD 107, 22 °C) (Merck)

- **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 Other adverse effects** Avoid transfer into the environment.

- **Water hazard:**

Mixture (Self-assessment acc. VwVwS Annex 4, German regulation):

Water hazard class 1: slightly hazardous for water.

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.

<b>European waste catalogue</b>	
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.

### \* SECTION 14: Transport information

<b>14.1 UN-Number</b>	
ADR, RID, ADN, IMDG, IATA	Void

<b>14.2 UN proper shipping name</b>	
ADR, RID, ADN, IMDG, IATA	Void

<b>14.3 Transport hazard class(es)</b>	
ADR, RID, ADN, IMDG, IATA	Void
Class	

<b>14.4 Packing group</b>	
ADR, RID, IMDG, IATA	Void

<b>14.5 Environmental hazards:</b>	
Marine pollutant:	No

<b>14.6 Special precautions for user</b>	Not applicable.
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<b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.
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<b>Transport/Additional information:</b>	Not dangerous according to the above specifications.
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### \* SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

<b>Regulation (EC) No 689/2008 concerning the export and import of dangerous chemicals:</b>
None of the ingredients is listed.

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· **Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:**

None of the ingredients is listed.

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 30

· **Information about limitation of use:**

Observe employment restrictions for pregnant and nursing mothers according to the 'mother protection guideline' (92/85/EEC).  
Employment restrictions concerning young persons must be observed.

· **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.

· **Relevant phrases**

H360FD May damage fertility. May damage the unborn child.

· **Training hints** Provide adequate information, instruction and training for operators.

· **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

ADR: Accord européen sur le transport 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 (REACH)

PNEC: Predicted No-Effect Concentration (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

Repr. 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)

International Chemical Safety Cards (ICSCs)

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