

# Safety Data Sheet

## according to 1907/2006/EC, Article 31

Printing date 30.09.2010

Revision: 30.09.2010

### \* 1 Identification of substance:

- **Product name:** Chlorine dioxide No.1
- **Catalog number:** 501271
- **Application of the substance / the preparation:** Reagent for water analysis
- **Supplier:**  
Tintometer GmbH  
Schleefstr. 8-12  
DE-44287 Dortmund  
Made in Germany  
www.tintometer.de
- **Informing department:**  
e-mail: produktsicherheit@tintometer.de  
Product Safety Department
- **Contact for technical details:**  
Technical Department  
e-mail: technik@tintometer.de
- **Emergency information:**  
Poison Center Berlin, Germany  
phone: 0049-30 30686 790

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

### \* 2 Hazards identification

- **Hazard designation:**



T Toxic

- **Information pertaining to particular dangers for man and environment**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" (1999/45/EC) in the latest valid version.

R 60 May impair fertility.

R 61 May cause harm to the unborn child.

R 41 Risk of serious damage to eyes.

Restricted to professional users.

- **GHS label elements**



**Danger**

H360 - May damage fertility or the unborn child.



**Danger**

H318 - Causes serious eye damage.

- **Prevention:**

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P281 Use personal protective equipment as required.

(Contd. on page 2)

# Safety Data Sheet

## according to 1907/2006/EC, Article 31

Printing date 30.09.2010

Revision: 30.09.2010

**Product name: Chlorine dioxide No.1**

(Contd. of page 1)

**· Response:**

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 or doctor/physician.

**· Storage:**

P405 Store locked up.








**· Disposal:**

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### \* 3 Composition/information on ingredients

· **Description:** Mixture contains anorganic and organic compounds.

**· Dangerous components:**

CAS: 10043-35-3 EINECS: 233-139-2 Index number: 005-007-00-2	boric acid Repr. Cat. 2;  T; R 60-61 Danger:  3.7/1B	70-80%
CAS: 7681-38-1 EINECS: 231-665-7 Index number: 016-046-00-X	sodium bisulfate  Xi; R 41 Danger:  3.3/1	25-35%
CAS: 6283-63-2 EINECS: 228-500-6	N,N-diethylbenzene-1,4-diammonium sulphate  Xn,  Xi; R 21/22-36/37/38 Warning:  3.1.O/4, 3.1.D/4, 3.2/2, 3.3/2, 3.8/3	0.1-1.0%

· **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

· **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 medical treatment.

**· 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.

Seek medical treatment.

**· The following symptoms may occur:**

irritations

after inhalation:

coughing

mucous membrane irritation

after swallowing:

vomiting

diarrhoea

gastric or intestinal trouble

After swallowing of large amounts:

fatigue

ataxia (impaired locomotor coordination)

drop in temperature

cramps

(Contd. on page 3)

# Safety Data Sheet

## according to 1907/2006/EC, Article 31

Printing date 30.09.2010

Revision: 30.09.2010

---

**Product name: Chlorine dioxide No.1**


---

(Contd. of page 2)

breathing difficulty  
CNS disorders

---

### \* 5 Fire fighting measures

- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
  - **Special hazards caused by the material, its products of combustion or resulting gases:**  
Formation of toxic gases is possible during heating or in case of fire.  
nitrogen oxides (NO<sub>x</sub>)  
Sulphur oxides (SO<sub>x</sub>)  
Sodium oxide
  - **Protective equipment:**  
Wear self-contained breathing apparatus.  
Wear full protective suit.
  - **Additional information**  
Ambient fire may liberate hazardous vapours.  
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.
- 

### 6 Accidental release measures

- **Person-related safety precautions:**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation
  - **Measures for environmental protection:** Do not allow product to reach sewage system or water bodies.
  - **Measures for cleaning/collecting:**  
Dispose of contaminated material as waste according to item 13.  
Collect mechanically.  
Ensure adequate ventilation.
- 

### \* 7 Handling and storage

- **Handling**
  - **Information for safe handling:**  
Open and handle container with care.  
Prevent formation of dust.
  - **Information about protection against explosions and fires:** The product is not flammable
  - **Storage**
  - **Requirements to be met by storerooms and containers:** Store in cool location.
  - **Information about storage in one common storage facility:** Store away from metals.
  - **Further information about storage conditions:**  
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.  
Store in a locked cabinet or with access restricted to technical experts or their assistants.
  - **Recommended storage temperature:** 20°C +/- 5°C
- 

### \* 8 Exposure controls and personal protection

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

(Contd. on page 4)

# Safety Data Sheet

## according to 1907/2006/EC, Article 31

Printing date 30.09.2010

Revision: 30.09.2010

---

**Product name: Chlorine dioxide No.1**


---

(Contd. of page 3)

- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
  - **Additional information:** The lists that were valid during the compilation were used as basis.
  - **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.
  - **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
  - **Recommended filter device for short term use:** Filter P3
  - **Protection of hands:**  
After use of gloves apply skin-cleaning agents and skin cosmetics.  
Preventive skin protection by use of skin-protecting agents is recommended.
  - **Material of gloves**  
nitrile rubber, NBR  
Recommended thickness of the material:  $\geq 0.11$  mm
  - **Penetration time of glove material**  
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.  
Value for the permeation: Level  $\geq 1$  ( $>10$  min)
  - **Eye protection:**  
use against the effects of fumes / dust  
Tightly sealed safety glasses.
  - **Body protection:** Protective work clothing.
- 

### 9 Physical and chemical properties:

· <b>Form:</b>	Tablets
· <b>Colour:</b>	White
· <b>Odour:</b>	Odourless
· <b>Melting point/Melting range:</b>	Not determined
· <b>Boiling point/Boiling range:</b>	300°C
· <b>Flash point:</b>	Not applicable
· <b>Danger of explosion:</b>	Product is not explosive.
· <b>Density</b>	Not determined
· <b>Solubility in / Miscibility with Water:</b>	Soluble
· <b>pH-value (9.7 g/l) at 20°C:</b>	1.9
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Solids content:</b>	100.0 %

---

### \*10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Materials to be avoided:**  
alkalis  
metals  
alcohols

(Contd. on page 5)

# Safety Data Sheet

## according to 1907/2006/EC, Article 31

Printing date 30.09.2010

Revision: 30.09.2010

**Product name: Chlorine dioxide No.1**

(Contd. of page 4)

reducing agents

oxidizing agents

**· Dangerous reactions**

Reacts with alcohols

Forms hydrogen in aqueous solution with metals

Liberates acid in contact with water or alcohol.

**· Dangerous products of decomposition:**

nitrous gases

see chapter 5

## \* 11 Toxicological information

**· Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

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

<b>10043-35-3 boric acid</b>		
Oral	LD50	2660 mg/kg (rat) (GESTIS)
Dermal	LD50	> 2000 mg/kg (rat) (RTECS)
	LD <sub>0</sub>	1500 mg/kg (child) (MERCK)
Inhalative	LC 50	>2.03 mg/l (rat) (MERCK)
	NOAEL	9.6 B mg/kg (rat) (NTP)
<b>6283-63-2 N,N-diethylbenzene-1,4-diammonium sulphate</b>		
Oral	LD50	497 mg/kg (rat) (MERCK)
<b>7681-38-1 sodium bisulfate</b>		
Oral	LD50	2490 mg/kg (rat)
Dermal	LD50	> 2000 mg/kg (rabbit)

**· Primary irritant effect:**
**· on the skin:**

DPD may cause allergic skin reaction

Irritant to skin and mucous membranes.

**· on the eye:** Strong irritant with the danger of severe eye injury.

**· Sensitization:** No sensitizing effect known.

**· Subacute to chronic toxicity:**

CAS-No. 10043-35-3:

MERCK: Sensitization test (guinea pig): negative (OECD 406)

**· Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:

After swallowing of large amounts:

Toxic

Irritant

The following applies to aromatic amines in general: systemic effect - methaemoglobinaemia with headache, cardia

dysrhythmia, drop in blood pressure, dyspnoea, spasm,

principal symptom: cyanosis (blue discoloration of the blood)

Absorption: gastro-intestinal tract, mucous membranes

**· Mutagenicity:**

Borid acid:

(Contd. on page 6)

# Safety Data Sheet

## according to 1907/2006/EC, Article 31

Printing date 30.09.2010

Revision: 30.09.2010

**Product name: Chlorine dioxide No.1**

(Contd. of page 5)

Mutagenicity (mammal cell test): chromosome aberration negative (NTP)

**· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

Boric acid:

Bacterial mutagenicity: Ames test - negative (IUCLID)

Mutagenicity (mammal cell test): chromosome aberration negative (NTP)

evaluation for carcinogenicity: negative in animals (NTP)

Product is suspected to cause injury to foetus.

### \* 12 Ecological information:

**· Information about elimination (persistence and degradability):**
**· Other information:**

Quantitative data on the ecological effect of this product are not available.

The following statements refer to the individual components.

**· Behaviour in environmental systems:**
**10043-35-3 boric acid**

log P(o/w)	0.76 (25°C) (.) (IUCLID)
------------	-----------------------------

**6283-63-2 N,N-diethylbenzene-1,4-diammonium sulphate**

log P(o/w)	2.24 (.)
------------	----------

**· Ecotoxicological effects:**
**· Aquatic toxicity:**
**10043-35-3 boric acid**

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

LC50	50-100 mg/l/96h (Oncorhynchus mykiss) (ECOTOX)
------	---

**· Remark:**

Toxic for fish:

sulphates &gt; 7 g/l

Forms corrosive mixtures with water even if diluted.

**· Bacterial toxicity:** sulphates toxic > 2.5 g/l

**· Additional ecological information:**
**· 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 decreased pH-values. A low pH-value harms aquatic organisms.

**· PBT assessments:** no data available

**· vPvB assessments:** no data available

### 13 Disposal considerations

**· Product:**
**· Recommendation** 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
-----------	--

(Contd. on page 7)

# Safety Data Sheet

## according to 1907/2006/EC, Article 31

Printing date 30.09.2010

Revision: 30.09.2010

---

**Product name: Chlorine dioxide No.1**


---

(Contd. of page 6)

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

### \* 14 Transport information

- **Land transport ADR/RID (cross-border)**
- **ADR/RID-GGVS/E Class:** -

- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No

- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

- **UN "Model Regulation":** -
- 

### \* 15 Regulatory information

- **Designation according to EC guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

- **Code letter and hazard designation of product:**

T Toxic

- **Hazard-determining components of labelling:**

boric acid

- **Risk phrases:**

- 60 May impair fertility.
- 61 May cause harm to the unborn child.
- 41 Risk of serious damage to eyes.

- **Safety phrases:**

- 53 Avoid exposure - obtain special instructions before use.
- 20 When using do not eat or drink.
- 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- 36/39 Wear suitable protective clothing and eye/face protection.
- 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- 60 This material and its container must be disposed of as hazardous waste.

- **Special designation of certain preparations:**

Restricted to professional users.

- **National regulations**

- **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.

- **Substances of very high concern (SVHC) according to REACH, Article 57**

10043-35-3	boric acid
------------	------------

— GB —

(Contd. on page 8)

# Safety Data Sheet

## according to 1907/2006/EC, Article 31

Printing date 30.09.2010

Revision: 30.09.2010

---

**Product name: Chlorine dioxide No.1**

---

(Contd. of page 7)

### \* 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 R-phrases**

- 21/22 Harmful in contact with skin and if swallowed.
- 36/37/38 Irritating to eyes, respiratory system and skin.
- 41 Risk of serious damage to eyes.
- 60 May impair fertility.
- 61 May cause harm to the unborn child.

#### · **Abbreviations and acronyms:**

- 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)
- 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
- 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)
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent

#### · **Sources**

- ECOTOX Database
- GESTIS-Stoffdatenbank
- NTP (National Toxicology Program)
- RTECS (Registry of Toxic Effects of Chemical Substances )
- Data arise from reference works and literature.

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