

## EC Safety Data Sheet

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Trade name : CHLOROBUTANOL x ½ H<sub>2</sub>O PH.EUR., USP / NF, BP, JP  
 Manufacturer : athenstaedt GmbH & Co KG, D-35088 Battenberg (Eder) Reviewed: 19.11.2013  
 Version 5 / E

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### 01. Identification of the substance / preparation and company

<b>Trade name:</b>	<b>Chlorobutanol x ½ H<sub>2</sub>O</b>
<b>Chemical name</b>	1,1,1-Trichlor-2-methyl-2-propanol
<b>Use of the Substance:</b>	Active substance, excipient in the pharmaceutical and cosmetic industry
<b>Information of manufacturer / supplier:</b>	athenstaedt GmbH & Co KG Am Beerberg 1 D-35088 Battenberg (Eder)
	Telefon: +49 6452 92 942 -0 Telefax: +49 6452 92 942-15
<b>Information provided by:</b>	<a href="http://www.chlorobutanol.com">http://www.chlorobutanol.com</a>
<b>Emergency telephone:</b>	+49 171 244 2812
<b>Advice on Safety Data Sheet:</b>	customer-services@athenstaedt.de

### 02. Hazards identification

**02.1. Classification:** H 302 Harmful if swallowed.

#### 02.2. Identification / Marking

**Hazard symbols:**



**P-phrases:**

P 264	Warning Wash hands after use thoroughly.
P 270	Do not eat, drink or smoke when using this product.
P 301 + P 312	If swallowed: Call a poison center or doctor/physician if you feel unwell.
P 330	Rinse mouth.

**02.3. Particular information pertaining specific risk for human / environment:**

Antibacterial and fungicidal effect.

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### 03. Composition / information on ingredients

#### 03.1. Substance

Chemical characterization:	substance	
Synonym:	Alcohol Trichlorisobutylicus, 1,1,1-Trichloro-2-methyl-2-propanol, Hemihydrate	
CAS- and EG-No	CAS-No.:6001-64-5	EG-No.: 200-317-6
Molecular weight:	186,48	
Formula:	C <sub>4</sub> H <sub>7</sub> Cl <sub>3</sub> Ox1/2 H <sub>2</sub> O	

#### 03.2. Chemical mixture

Not applicable.

Substance with prescribed EC limit

Not applicable.

### 04. First aid measures

#### 04.01. Description of first aid measures

General information:	Remove contaminated clothing and shoes immediately.
After inhalation:	Rest, fresh air and medical help.
After skin contact:	When in contact with the skin, clean with soap and water.
After eye contact:	Separate eyelids, wash the eyes thoroughly with water (15 min). Uninjured eye protection, remove contact lenses.
After ingestion:	Induce vomiting, rinse mouth thoroughly with water and drink plenty of water, seek medical attention.

#### 04.2. Important and delayed symptoms and effects

Disorder of the central nervous system after oral uptake. Gastric lavage, administer artificial respiration.

#### 04.3. Indication of immediate medical attention and special treatment

No relevant information available.

### 05. Fire-fighting measures

#### 05.1. Extinguishing media

Suitable extinguishing media:	Carbon dioxide; extinguishing powder. Cool endangered containers with water spray jet.
Extinguishing media that must not be used for safety reasons:	Full water jet.

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### 05.2. Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases:

In case of fire can be formed: Hydrogen chloride (HCl).

### 05.3. Special protective equipment for fire-fighters:

Use self-contained breathing apparatus. Wear protective clothing. Do not inhale explosion gases or combustion gases.

### 05.4. Other Informations

Keep firefighting water and dispose in accordance with Chapter 13.

## 06. Accidental release measures

- |  |   |
|--|---|
| <b>06.1. Personal precautions:</b>               | Refer to protective measures listed in sections 7 and 8. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing, keep people away and stay on the upwind side. Change contaminated clothing. |
| <b>06.2. Environmental precautions:</b>          | Do not discharge into the drains/surface waters / ground-water. Retain and dispose of contaminated wash water.  |
| <b>06.3. Methods of cleaning up / taking up:</b> | Pick up mechanically. When picked up, treat material as prescribed under heading "Disposal considerations". Clean contaminated surfaces thoroughly.   |
| <b>06.4. Reference to other chapters:</b>        | Refer to protective measures listed in sections 7, 8 and 13.  |

## 07. Handling and storage

### 07.1. Precautions for safe handling

Advice on safe handling: General protective and hygienic measures:	Exhaust ventilation at the object is necessary. Observe the usual precautions when handling chemicals. Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Wash hands before breaks and after work. Clean skin thoroughly after work; apply skin cream. Avoid contact with eyes and skin. Remove soiled or soaked clothing immediately. Separate storage of work clothing.
Fire and explosion protection:	Keep away from ignition sources and provide for good ventilation.

### 07.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:	Keep in original packaging, tightly closed.
Further information about storage conditions:	Keep container tightly closed and dry in a cool, well-ventilated place. Protect from heat and direct sunlight. Protect from atmospheric moisture and water.
Storage class according to Technical Rule 510:	10-13 (Non-combustible solids).

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### 08. Exposure controls / personal protection

**08.1. Exposure limit values:** None

#### 08.2. Environmental exposure controls / Personal protective equipment:

##### Appropriate engineering controls

Technical measures and appropriate working operations should have priority over the use of personal protective equipment. Refer to Section 7.1

##### Personal protective equipment:

Respiratory protection: If it is necessary respirator as risk assessment: gas filter ABEK with dust filter FFP2.

Hand protection: Recommended are as protection from splashes gloves made of nitril Cat III, layer thickness (mm): 0.4; Breakthrough time (min):> 120

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the resultant standard EN374.

Eye protection: Tightly fitting safety glasses (EN 166).

Skin Protection: Clothing as usual in the chemical industry ( Cat II).

Additional information on the PSA: Protective clothing should be selected specifically for the workplace in their working place, depending on concentration and quantity . The resistance should be ascertained with the respective supplier.

Delimitation and monitoring of the environmental exposition : See sections 6 and 7.

### 09. Physical and chemical properties

#### 09.1. Information on basic physical and chemical properties

General information:	Form:	crystalline
	Colour:	colourless to white
	odour:	camphor-like

##### Data relevant to safety

Flash point:	>110 °C closed cup
Ignition temperature:	no data available
Vapour pressure:	no data available
Density:	no data available
Boiling point:	1013 mbar      167 °C
Melting point:	95-99 °C
Solubility in water:	20 °C            7,7g/l
Soluble in organic solvent (20 °C):	Ethanol, Ether, Chloroform, Glycerol (85%)
ph value:	20 °C            4,5-6
	Concentration: 7,7g/l

Other information: The product is highly hygroscopic.

#### 09.2. Other information

Other physical and chemical data have not been determined.

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### 10. Stability and reactivity

- 10.1. Reactivity:** no data available  
**10.2. Chemical stability** no data available  
**10.3. Possibility of Hazardous Reactions:** Oxidizing agents; Acids; Alcalis.  
**10.4. Conditions to avoid:** None under normal use.  
**10.5. Materials to avoid:** no data available.  
**10.6. Hazardous decomposition products:** In case of fire the following can be released: Hydrogen chloride (HCl).

### 11. Toxicological information

#### 11.1. Acute Toxicity:

Type	In mg/kg	Form of administration	Spezies:	Source:
LD50	510 mg/kg	oral	rat	DIMDI: RTECS (RT00)©
LD50	>2000 mg/kg	dermal	Rabbit	foreign source

#### Irritant / corrosive effects:

irritant effect on skin: non-irritant during 24 h after exposure (rabbit).  
 irritant effect on eyes: non-irritant (rabbit).  
 Possible ingestion of large quantities: depression, lethargy, slowed breathing.

Be handled with the usual method for dealing with chemicals.

### 12. Ecological information

- 12.1. Toxicity:** Toxicity to fish:  
 LC50 fish (96h): 135 mg/l  
 Source: IFA GESTIS Material database
- 12.2 Persistence and degradability:** no data available
- 12.3. Bioaccumulation potential:** Log P o/w = 2,03 There is no appreciable bioaccumulation potential.
- 12.4. Mobility in soil:** no data available
- 12.5. Results of PBT and vPvB assessment** Inapplicable.
- 12.6. Other harmful effects** no data available
- 12.7. General information** Not discharge into the drains or waters or storing on public depositories. Do not discharge product into the environment.

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### 13. Disposal considerations

#### 13.1. Waste treatment methods

Remove solid dry, gather in tightly sealed containers and dispose of as hazardous waste.  
 Disposal as hazardous waste in accordance with the regulations of AbfG.  
 Recommended AVV-No. 0705.

### 14. Transport information

#### Land transport and inland navigation / ADR / RID:

The product is not defined under national/international road, rail, sea and air transport regulations as a hazardous material.

### 15. Regulatory information

#### 15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture

##### Self-assessment:

##### Not applicable ...

Observe employment restrictions for expectant and nursing mothers.  
 Observe employment restrictions for young people.  
 Note BGI 5151 "Safe working in the pharmaceutical industry."

##### Reference to Technical Rules for Hazardous Substances (TRGS)

Technical Rule 400 - Risk assessment  
 Storage class according to Technical Rule 510: 10-13  
 3 - very hazardous, Identification No.: 855.

##### Water hazard class:

##### Classification according to TA air:

Total dust: Maximum allowable emission:  
 Mass flow > 0.2 kg / h: 20 mg / m<sup>3</sup>,  
 Mass flow rate ≤ 0.2 kg / h: 0.15 g / m<sup>3</sup>

#### 15.2. Chemical Safety Assessment

Not performed.

### 16. Other information

#### Further informations:

##### Department issuing data sheet:

Quality assurance.

This information is based on our present knowledge and experience. The material safety data sheet describes products with reference to safety requirements. The information, however, shall not constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

Replaces issue of 22<sup>th</sup> December 2010.

**Reason for change:** Change in water hazard class  
 General update

Updated chapters are marked with \* .