

Safety data sheet

according to 1907/2006/EC, Article 31

Revision: 29.02.2008

Printing date 02.07.2013

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Trade name

4-Chloro-1-butanol

Stock number:

L04042

CAS Number:

928-51-8

EC number:

213-175-5

1.2 Relevant identified uses of the substance or mixture and uses advised against.

Identified use:

SU24 Scientific research and development

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG
A Johnson Matthey Company
Zeppelinstr. 7b
76185 Karlsruhe / Germany
Tel: +49 (0) 721 84007 280
Fax: +49 (0) 721 84007 300
Email: tech@alfa.com
www.alfa.com

Informing department:

Product safety Tel + +049 (0) 7275 988687-0

1.4 Emergency telephone number:

Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)

Poison Information Center Mainz

www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xn; Harmful

R22: Harmful if swallowed.

Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.

Information concerning particular hazards for human and environment:

Not applicable

Other hazards that do not result in classification

No information known.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms

Signal word

Hazard statements

The substance is classified and labelled according to the CLP regulation.

GHS07

Warning

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

P261

Avoid breathing dust/fume/gas/mist/vapours/spray.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P321 Specific treatment (see on this label).

P405

Store locked up.

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

regulations.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT:

Not applicable.

vPvB:

Not applicable.

SECTION 3: Composition/information on ingredients**3.1 Substances**

CAS# Designation:

928-51-8 4-Chloro-1-butanol

Identification number(s):

213-175-5

EC number:

213-175-5

SECTION 4: First aid measures**4.1 Description of first aid measures**

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact

Seek immediate medical advice.

Instantly wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing

Seek medical treatment.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

Suitable extinguishing agents

In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

5.2 Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Carbon monoxide and carbon dioxide

Hydrogen chloride (HCl)

5.3 Advice for firefighters

Protective equipment:

Wear self-contained breathing apparatus.

Wear full protective suit.

DE/E

(Contd. on page 2)

Safety data sheet

according to 1907/2006/EC, Article 31

Revision: 29.02.2008

Printing date 02.07.2013

Trade name **4-Chloro-1-butanol**

(Contd. of page 1)

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation

6.2 Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.
Do not allow product to reach sewage system or water bodies.
Do not allow to enter the ground/soil.

6.3 Methods and material for containment and cleaning up:

Keep away from ignition sources.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.

Prevention of secondary hazards:

Keep away from ignition sources.

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.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Keep containers tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

7.2 Conditions for safe storage, including any incompatibilities**Storage Requirements to be met by storerooms and containers:**

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

7.3 Specific end use(s)

No further relevant information available.

SECTION 8: Exposure controls/personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

8.1 Control parameters**Components with critical values that require monitoring at the workplace:**

Not required.

Additional information:

No data

8.2 Exposure controls**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and food.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Use breathing protection with high concentrations.

Check protective gloves prior to each use for their proper condition.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Impervious gloves

Not determined

Safety glasses

Face protection

Protective work clothing.

Breathing equipment:**Protection of hands:****Material of gloves****Penetration time of glove material****Eye protection:****Body protection:****SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Appearance:****Form:**

Liquid

Smell:

Not determined

Odour threshold:

Not determined.

pH-value:

Not determined.

Change in condition**Melting point/Melting range:**

Not determined

Boiling point/Boiling range:

86-89 °C

Sublimation temperature / start:

Not determined

Flash point:

66 °C

Inflammability (solid, gaseous)

Not determined.

Ignition temperature:

Not determined

Decomposition temperature:

Not determined

Self-inflammability:

Not determined.

Danger of explosion:

Product is not explosive.

Critical values for explosion:**Lower:**

Not determined

Upper:

Not determined

Steam pressure:

Not determined

Density at 20 °C

1,089 g/cm³

Relative density

Not determined.

Vapour density

Not determined.

Evaporation rate

Not determined.

Solubility in / Miscibility with

Not determined

Water:

Not determined

Partition coefficient (n-octanol/water):

Not determined.

(Contd. on page 3)

DE/E

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 02.07.2013

Revision: 29.02.2008

Trade name **4-Chloro-1-butanol**

(Contd. of page 2)

Viscosity: dynamic: kinematic: 9.2 Other information	Not determined. Not determined. No further relevant information available.
--	--

SECTION 10: Stability and reactivity

10.1 Reactivity 10.2 Chemical stability Thermal decomposition / conditions to be avoided: 10.3 Possibility of hazardous reactions 10.5 Incompatible materials: 10.6 Hazardous decomposition products:	No information known. Stable under recommended storage conditions. No decomposition if used and stored according to specifications. No dangerous reactions known Oxidizing agents Carbon monoxide and carbon dioxide Hydrogen chloride (HCl)
--	--

SECTION 11: Toxicological information

11.1 Information on toxicological effects Acute toxicity: LD/LC50 values that are relevant for classification: Skin irritation or corrosion: Eye irritation or corrosion: Sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: Specific target organ system toxicity - repeated exposure: Specific target organ system toxicity - single exposure: Aspiration hazard: Other information (about experimental toxicology): Additional toxicological information:	Harmful if swallowed. No data Causes skin irritation. Causes serious eye irritation. No sensitizing effect known. No effects known. No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH. No effects known. No effects known. May cause respiratory irritation. No effects known. Tumorigenic effects have been observed on tests with laboratory animals. To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
---	--

SECTION 12: Ecological information

12.1 Toxicity Aquatic toxicity: 12.2 Persistence and degradability 12.3 Bioaccumulative potential 12.4 Mobility in soil Additional ecological information: General notes: 12.5 Results of PBT and vPvB assessment PBT: vPvB: 12.6 Other adverse effects	No further relevant information available. No further relevant information available. No further relevant information available. No further relevant information available. Do not allow material to be released to the environment without proper governmental permits. Water hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system. Avoid transfer into the environment. Not applicable. Not applicable. No further relevant information available.
---	---

SECTION 13: Disposal considerations

13.1 Waste treatment methods Recommendation Uncleaned packagings: Recommendation:	Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations. Consult state, local or national regulations for proper disposal. Disposal must be made according to official regulations.
--	---

SECTION 14: Transport information

UN-Number ADR, IMDG, IATA	None
14.2 UN proper shipping name ADR, IMDG, IATA	None
14.3 Transport hazard class(es) ADR Class Label IMDG, IATA Class	None 3 None
Packing group ADR, IMDG, IATA	None
14.5 Environmental hazards:	Not applicable.
14.6 Special precautions for user	Not applicable.
14.7 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.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Australian Inventory of Chemical Substances Standard for the Uniform Scheduling of Drugs and Poisons National regulations Information about limitation of use:	Substance is not listed. Substance is not listed. Employment restrictions concerning young persons must be observed. For use only by technically qualified individuals.
--	--

(Contd. on page 4)
DE/E

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

Printing date 02.07.2013

Revision: 29.02.2008

Trade name **4-Chloro-1-butanol**

(Contd. of page 3)

Water hazard class:	Water hazard class 1 (Self-assessment): slightly hazardous for water.
Other regulations, limitations and prohibitive regulations	
ELINCS (European List of Notified Chemical Substances)	Substance is not listed.
Substances of very high concern (SVHC) according to REACH, Article 57	Substance is not listed.
REACH - Pre-registered substances	Substance is listed.
15.2 Chemical safety assessment:	A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing data specification sheet: Health, Safety and Environmental Department.**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

DE/E