

# OTTO CHEMIE PVT LTD

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ISO 9001: 2015

## MATERIAL SAFETY DATA SHEET

### SECTION 1 Product identifiers

Product name : 1,4-Butanediol, 99%

Product Number : B 2275

CAS-No. : 110-63-4

### SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 4), H302

Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal word Warning

Hazard statement(s)

H302 Harmful if swallowed.

H336 May cause drowsiness or dizziness.

Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P301 + P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

Supplemental Hazard Statements none

Reduced Labeling (<= 125 ml)  
Pictogram

Signal word Warning

Hazard statement(s) none

Precautionary statement(s) none

Supplemental Hazard Statements none

Supplemental Hazard Statements none

Supplemental Hazard Statements none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms : 1,4-Butylene glycol

Tetramethylene glycol

Formula : C4H10O2

Molecular weight : 90,12 g/mol

CAS-No. : 110-63-4

EC-No. : 203-786-5

Component	Classification	Concentration
butane-1,4-diol		
CAS-No. 110-63-4 EC-No.203-786-5	Acute Tox. 4; STOT SE 3; H302, H336	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### SECTION 4: First aid measures

##### 4.1 Description of first-aid measures

###### General advice

Consult a physician. Show this material safety data sheet to the doctor in attendance.

###### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

Consult a physician.

###### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

###### In case of eye contact

Flush eyes with water as a precaution.

###### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

##### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

##### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

#### SECTION 5: Firefighting measures

##### 5.1 Extinguishing media

###### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

##### 5.2 Special hazards arising from the substance or mixture

Carbon oxides

##### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

##### 5.4 Further information

No data available

#### SECTION 6: Accidental release measures

##### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

For personal protection see section 8.

##### 6.2 Environmental precautions

Do not let product enter drains.

##### 6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

##### 6.4 Reference to other sections

For disposal see section 13.

#### SECTION 7: Handling and storage

##### 7.1 Precautions for safe handling

###### Advice on safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

###### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

For precautions see section 2.2.

##### 7.2 Conditions for safe storage, including any incompatibilities

###### Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Store in cool place.

###### Storage class

Storage class (TRGS 510): 10: Combustible liquids

##### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

#### SECTION 8: Exposure controls/personal protection

##### 8.1 Control parameters

###### Ingredients with workplace control parameters

###### Derived No Effect Level (DNEL)

Application Area	Routes of exposure	Health effect	Value
Workers	Skin contact	Long-term systemic effects	19mg/kg BW/d
Workers	Inhalation	Long-term systemic effects	136 mg/m <sup>3</sup>
Predicted No Effect Concentration (PNEC)			
Compartment		0,244 mg/kg	
Soil		0,0813 mg/l	

Sea water	0,813 mg/l
Fresh water	0,361 mg/kg
Fresh water sediment	3,61 mg/kg
Onsite sewage treatment plant	1554 mg/l
Onsite sewage treatment plant	8,13 mg/l

## 8.2 Exposure controls

### Personal protective equipment

#### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

#### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

#### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface respirator with multi-purpose combination (US) or type ABEK (EN 14387)

respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |   |  |
|---|--|
| a) Appearance Form:                             | viscous                                      |
|   | Color: colorless                             |
| b) Odor   | No data available                            |
| c) Odor Threshold                               | No data available                            |
| d) pH   | No data available                            |
| e) Melting point/freezing point                 | Melting point/range: 16 °C - lit.            |
| f) Initial boiling point and boiling range      | 230 °C - lit.                                |
| g) Flash point                                  | 134 °C - closed cup                          |
| h) Evaporation rate                             | No data available                            |
| i) Flammability (solid, gas)                    | No data available                            |
| j) Upper/lower flammability or explosive limits | No data available                            |
| k) Vapor pressure                               | 0,019 hPa at 25 °C - OECD Test Guideline 104 |
| l) Vapor density                                | 3,11 - (Air = 1.0)                           |

m) Density	1,017 g/cm <sup>3</sup> at 25 °C - lit.
Relative density	No data available
n) Water solubility	100 g/l at 25 °C - OECD Test Guideline 105- completely miscible
o) Partition coefficient: n-octanol/water	log Pow: -0,88 at 25 °C - OECD Test Guideline 107
p) Autoignition temperature	385 °C at 1.013 hPa
q) Decomposition temperature	No data available
r) Viscosity	Viscosity, kinematic: 83,2 mm <sup>2</sup> /s at 20 °C Viscosity, dynamic: No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available
<b>9.2 Other safety information</b>	
Dissociation constant	14,5
Relative vapor Density	3,11 - (Air = 1.0)

## SECTION 10: Stability and reactivity

10.1 Reactivity	No data available
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	No data available
10.4 Conditions to avoid	No data available
10.5 Incompatible materials	Strong oxidizing agents, Acid chlorides, Acid anhydrides, Reducing agents
10.6 Hazardous decomposition products	In the event of fire: see section 5

## SECTION 11: Toxicological information

11.1 Information on toxicological effects	
Acute toxicity	
LD50 Oral - Rat - male and female	- 1.500 mg/kg
LC50 Inhalation - Rat - male and female - 4 h	- > 5,1 mg/l - aerosol (OECD Test Guideline 403)
LD50 Dermal - Rat - male and female	- > 5.000 mg/kg
Skin corrosion/irritation	
Skin - Rabbit	
Result: No skin irritation - 24 h	
Serious eye damage/eye irritation	
Eyes - Rabbit	
Result: No eye irritation	
Respiratory or skin sensitization	
Maximization Test - Guinea pig	
Result: Does not cause skin sensitization.	
Germ cell mutagenicity	
Test Type: In vitro mammalian cell gene mutation test	
Test system: Chinese hamster ovary cells	
Metabolic activation: with and without metabolic activation	
Method: OECD Test Guideline 476	
Result: negative	
Carcinogenicity	
No data available	
Reproductive toxicity	
No data available	
Specific target organ toxicity - single exposure	
May cause drowsiness or dizziness.	
Specific target organ toxicity - repeated exposure	
No data available	
Aspiration hazard	
No data available	
11.2 Additional Information	
Repeated dose toxicity - Rat - male and female - Oral - NOAEL (No observed adverse effect level) - 50 mg/kg - LOAEL (Lowest observed adverse effect level) - 500 mg/kg	
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.	
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## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish static test LC50 - Pimephales promelas (fathead minnow) - > 30.000 mg/l - 96 h

(OECD Test Guideline 203)

Toxicity to daphnia

and other aquatic

invertebrates

static test EC50 - Daphnia magna (Water flea) - 813 mg/l - 48 h

(OECD Test Guideline 202)

Toxicity to algae static test EC50 - Desmodesmus subspicatus (green algae) - > 500 mg/l - 72 h

### 12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 10 d

Result: 90 - 100 % - Readily biodegradable.

(OECD Test Guideline 302B)

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Endocrine disrupting properties

No data available

### 12.7 Other adverse effects

No data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Contaminated packaging

Dispose of as unused product.

## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: -

IMDG: -

IATA: -

### 14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

### 14.3 Transport hazard class(es)

ADR/RID: -

IMDG: -

IATA: -

### 14.4 Packaging group

ADR/RID: -

IMDG: -

IATA: -

### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

### 14.6 Special precautions for user

Further information

Not classified as dangerous in the meaning of transport regulations.

## SECTION 15: Regulatory information

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

### 15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance

**Section 16: Other Information**

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

