

**1,4-Butanediol
CAS No 110-63-4**

**MATERIAL SAFETY DATA SHEET
SDS/MSDS**

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

1.1 Product identifiers

Product name : **1,4-Butanediol**

CAS-No. : 110-63-4

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

Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet

Company : Central Drug House (P) Ltd
7/28 Vardaan House
New Delhi-10002
INDIA

Telephone : +91 11 49404040
Email : care@cdhfinechemical.com

1.4 Emergency telephone number

Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

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 Skin Irritation

Hazard statement(s)

H302

Harmful if swallowed.

H336

May cause drowsiness or dizziness.

Precautionary statement(s)
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
Rinse mouth.

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

Registration number : 01-2119471849-20-XXXX

Hazardous ingredients according to Regulation (EC) No 1272/2008

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

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 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 vapours, 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

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 510): 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

Derived No Effect Level (DNEL)

Application Area	Exposure routes	Health effect	Value
Workers	Skin contact	Long-term systemic effects	19mg/kg BW/d
Workers	Inhalation	Long-term systemic effects	136 mg/m3

Predicted No Effect Concentration (PNEC)

Compartment	Value
Soil	0.244 mg/kg
Marine water	0.0813 mg/l
Fresh water	0.813 mg/l
Marine sediment	0.361 mg/kg
Fresh water sediment	3.61 mg/kg
Onsite sewage treatment plant	1554 mg/l
Aquatic intermittent release	8.13 mg/l

8.2 Exposure controls

Appropriate engineering controls

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

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.

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 (US) or type ABEK (EN 14387) respirator cartridges as a backup to enginee 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 Colour: colourless
b) Odour	No data available
c) Odour 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) Vapour pressure	0.019 hPa at 25 °C - OECD Test Guideline 104
l) Vapour density	3.11 - (Air = 1.0)
m) Relative density	1.017 g/cm ³ at 25 °C - lit.
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) Auto-ignition temperature	385 °C at 1,013 hPa
q) Decomposition temperature	No data available
r) Viscosity	83.2 mm ² /s at 20 °C -
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

Dissociation constant	14.5
Relative vapour 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

Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available
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(Butane-1,4-diol)

LC50 Inhalation - Rat - male and female - 4 h - > 5.1 mg/l(Butane-1,4-diol)
(OECD Test Guideline 403)

LD50 Dermal - Rat - male and female - > 5,000 mg/kg(Butane-1,4-diol)

Skin corrosion/irritation

Skin - Rabbit(Butane-1,4-diol)
Result: No skin irritation - 24 h

Serious eye damage/eye irritation

Eyes - Rabbit(Butane-1,4-diol)
Result: No eye irritation

Respiratory or skin sensitisation

Maximisation Test - Guinea pig(Butane-1,4-diol)
Result: Does not cause skin sensitisation.

Germ cell mutagenicity

In vitro mammalian cell gene mutation test(Butane-1,4-diol)
Chinese hamster ovary cells
Result: negative

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available(Butane-1,4-diol)

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.(Butane-1,4-diol)

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available(Butane-1,4-diol)

Additional Information

Repeated dose toxicity - Rat - male and female - Oral - No observed adverse effect level - 50 mg/kg -
Lowest observed adverse effect level - 500 mg/kg(Butane-1,4-diol)

RTECS: Not available

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(Butane-1,4-diol)
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 813 mg/l - 48 h(Butane-1,4-diol)
(OECD Test Guideline 202)

Toxicity to algae static test EC50 - Desmodesmus subspicatus (Scenedesmus subspicatus) - > 500 mg/l - 72 h(Butane-1,4-diol)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 10 d(Butane-1,4-diol)
Result: 90 - 100 % - Readily biodegradable
(OECD Test Guideline 302B)

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available(Butane-1,4-diol)

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 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.

Contaminated packaging

Dispose of as unused product.

