| 1,4-**Butanediol**<br>**CAS No 110-63-4** | **MATERIAL SAFETY DATA SHEET**<br>**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 : Pallav Chemicals & Solvents Pvt. Ltd
253, Shiv Shakti Industrial Estate, Opp Mittal Estate
Andheri Kurla Road, Andheri (E), Mumbai - 400050
INDIA

Telephone : +91 22 4928 4000
Email : sales@pallavchemicals.com

### 1.4 Emergency telephone number

Emergency Phone # : +91 22 4928 4000 (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

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<br>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<br>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/cm3 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<br>at 1,013 hPa |
| q) | Decomposition temperature | No data available |
| r) | Viscosity | 83.2 mm2/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.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(Butane-1,4-diol)

## 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)<br>(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)<br>(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)<br>Result: 90 - 100 % - Readily biodegradable<br>(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.

## 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**

No data available

## SECTION 15: Regulatory information

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

This safety datasheet 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

**Full text of H-Statements referred to under sections 2 and 3.**

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H336 | May cause drowsiness or dizziness. |

**Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Pallav Chemicals & Solvents Pvt. Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.pallavchemicals.com for additional terms and conditions of sale.