2-Butyne-1,4-diol (cas 110-65-6) MSDS

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name : 2-Butyne-1,4-diol
Product Number : B103209
Brand : Anonymous
Index-No. : 603-076-00-9
CAS-No. : 110-65-6

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

Identified uses : Laboratory chemicals, Manufacture of substances

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
Skin corrosion (Category 1B)
Acute toxicity, Inhalation (Category 3)
Acute toxicity, Oral (Category 3)
Acute toxicity, Dermal (Category 4)
Specific target organ toxicity - repeated exposure (Category 2)
Skin sensitization (Category 1)

Classification according to EU Directives 67/548/EEC or 1999/45/EC
Causes burns. May cause sensitization by skin contact. Toxic by inhalation and if swallowed. Harmful in contact with skin. Harmful: danger of serious damage to health by prolonged exposure if swallowed.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram

Signal word : Danger
Hazard statement(s)

H301 Toxic if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/ physician.

Supplemental Hazard Statements : none


Hazard symbol(s)

R-phrase(s)

R21 Harmful in contact with skin.
R23/25 Toxic by inhalation and if swallowed.
R34 Causes burns.
R43 May cause sensitization by skin contact.
R48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.

S-phrase(s)
2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Butyne-1,4-diol</td>
<td></td>
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<tr>
<td>CAS-No.</td>
<td>110-65-6</td>
</tr>
<tr>
<td>EC-No.</td>
<td>203-788-6</td>
</tr>
<tr>
<td>Index-No.</td>
<td>603-076-00-9</td>
</tr>
</tbody>
</table>

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
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. 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
prolonged or repeated exposure can cause: narcosis, Central nervous system depression, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

4.3 Indication of any immediate medical attention and special treatment needed
no data available

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 fire fighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.
7. **HANDLING AND STORAGE**

7.1 **Precautions for safe handling**
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

7.2 **Conditions for safe storage, including any incompatibilities**
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
Air and moisture sensitive. Handle and store under inert gas.

7.3 **Specific end uses**
No data available.

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8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1 **Control parameters**

8.2 **Exposure controls**

8.2.1 **Appropriate engineering controls**
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**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 EU Directive 89/686/EEC and the standard EN 374 derived from it.

  - **Immersion protection**
    Material: Nitrile rubber
    Minimum layer thickness: 0,11 mm
    Break through time: > 480 min
    Material tested: Dermatril? (Anonymous Z677272, Size M)

  - **Splash protection**
    Material: Nitrile rubber
    Minimum layer thickness: 0,11 mm
    Break through time: > 30 min
    Material tested: Dermatril? (Anonymous Z677272, Size M)

  Data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, 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 CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist 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 full-face particle respirator type N100 (US) or type P3 (EN 143) 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).

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9. **PHYSICAL AND CHEMICAL PROPERTIES**

9.1 **Information on basic physical and chemical properties**

- **Appearance**
  Form: solid
  Colour: beige
b) Odour                  no data available

c) Odour Threshold        no data available

d) pH                     no data available

e) Melting point/freezing point
Melting point/range: 53 - 58 °C - lit.

f) Initial boiling point and boiling range
238 °C - lit.

g) Flash point
152 °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
< 0,1 hPa at 55 °C

l) Vapour density         no data available

m) Relative density       no data available

n) Water solubility       no data available

o) Partition coefficient: n-octanol/water
no data available

p) Autoignition temperature
no data available

q) Decomposition temperature
no data available

r) Viscosity              no data available

s) Explosive properties   no data available

t) Oxidizing properties   no data available

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
no data available

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
Air Avoid moisture.

10.5 Incompatible materials
Strong oxidizing agents, Strong bases, Strong acids, Mercury/mercury oxides., Halides

10.6 Hazardous decomposition products
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - rat - 105 mg/kg
LC50 Inhalation - rat - 4 h - 2.500 mg/m3

LD50 Dermal - rat - 660 mg/kg

Skin corrosion/irritation
Skin - rabbit - Skin irritation

Serious eye damage/eye irritation
Eyes - rabbit - Moderate eye irritation

Respiratory or skin sensitization
May cause allergic skin reaction.

Germ cell mutagenicity
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
Reproductive toxicity - rat - Oral
Maternal Effects: Other effects.
Reproductive toxicity - rat - Oral
Maternal Effects: Other effects. Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard
no data available

Potential health effects
Inhalation
Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion
Toxic if swallowed. Causes burns.

Skin
Toxic if absorbed through skin. Causes skin burns.

Eyes
Causes eye burns.

Signs and Symptoms of Exposure
prolonged or repeated exposure can cause:., narcosis, Central nervous system depression. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information
RTECS: ES0525000

12. ECOLOGICAL INFORMATION
12.1 Toxicity
Toxicity to fish
LC50 - Pimephales promelas (fathead minnow) - 53,6 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates
EC50 - Daphnia magna (Water flea) - 26,8 mg/l - 48 h

Toxicity to algae
EC50 - Desmodesmus subspicatus (green algae) - 480 mg/l - 72 h

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
no data available

12.6 Other adverse effects
Harmful to aquatic life.
no data available

13. DISPOSAL CONSIDERATIONS
13.1 Waste treatment methods
Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION
14.1 UN number
ADR/RID: 2716
IMDG: 2716
IATA: 2716

14.2 UN proper shipping name
ADR/RID: 1,4-BUTYNE DIOL
IMDG: 1,4-BUTYNE DIOL
IATA: 1,4-Butyenediol
14.3  Transport hazard class(es)  
ADR/RID: 6.1  
IMDG: 6.1  
IATA: 6.1

14.4  Packaging group  
ADR/RID: III  
IMDG: III  
IATA: III

14.5  Environmental hazards  
ADR/RID: no  
IMDG Marine pollutant: no  
IATA: no

14.6  Special precautions for user  
no data available

15.  REGULATORY INFORMATION  
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1  Safety, health and environmental regulations/legislation specific for the substance or mixture  
no data available

15.2  Chemical Safety Assessment  
no data available

16.  OTHER INFORMATION  
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 this document is based on the resent 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. guidechem shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.