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SIGMA-ALDRICH

### Material Safety Data Sheet

Date Printed: 03/09/2005  
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Version 1.30

#### Section 1 - Product and Company Information

Product Name: 1,2-Butanediol, 98%  
 Product Number: 177652  
 Brand: Aldrich Chemical

Company: Sigma-Aldrich  
 Street Address: 3050 Spruce Street  
 City, State, Zip, Country: SAINT LOUIS, MO 63103 US  
 Technical Phone: 314 771 5765  
 Fax: 800 325 5052

Emergency Phone: 414 273 3850 Ext. 5996

#### Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313	EC no	Annex I Index Number
1,2-BUTANEDIOL	584-03-2	No	209-527-2	
Formula	C4H10O2			
Synonyms	1,2-Butylene glycol, 1,2-Dihydroxybutane			

#### Section 3 - Hazards Identification

Emergency Overview  
Combustible.

HMIS Rating  
Health: 0 Flammability: 2 Reactivity: 0

NFPA Rating  
Health: 0 Flammability: 2 Reactivity: 0

For additional information on toxicity, please refer to Section 11.

#### Section 4 - First Aid Measures

Oral Exposure  
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure  
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure  
In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure  
In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

#### Section 5 - Fire Fighting Measures

Flash Point: 200 °F 93 °C

Autoignition Temp: N/A

Extinguishing Media  
Suitable  
Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting  
Protective Equipment  
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
Specific Hazard(s)  
Combustible liquid. Emits toxic fumes under fire conditions.

#### Section 6 - Accidental Release Measures

Procedure to be Followed In Case of Leak or Spill  
Evacuate area.

Procedure(s) of Personal Precaution(s)  
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up  
Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

#### Section 7 - Handling and Storage

Handling  
User Exposure  
Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage  
Suitable  
Keep tightly closed. Keep away from heat and open flame.

#### Section 8 - Exposure Controls / PPE

Engineering Controls  
Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment  
Respiratory  
Government approved respirator.  
Hand  
Compatible chemical-resistant gloves.  
Eye  
Chemical safety goggles.

**General Hygiene Measures**

Wash contaminated clothing before reuse. Wash thoroughly after handling.

**Section 9 - Physical/Chemical Properties****Appearance****Physical State**

Liquid

Molecular Weight: 90.12 AMU

<u>Property</u>	<u>Value</u>	<u>At Temperature or Pressure</u>
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pH	N/A	
BP/BP Range	191 - 192 °C	747 mmHg
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	1.006 g/cm <sup>3</sup>	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point °F	200 °F	
Flash Point °C	93 °C	
Explosion Limits	N/A	

Method: closed cup

Method: closed cup

Flammability	N/A
Autoignition Temp	N/A
Refractive Index	1.438
Solubility	N/A

N/A = not available

**Section 10 - Stability and Reactivity****Stability**

Stable

Stable

**Materials to Avoid**

Acid chlorides, Acid anhydrides, Oxidizing agents, Chloroformates, Reducing agents.

**Hazardous Decomposition Products****Hazardous Decomposition Products**

Carbon monoxide, Carbon dioxide.

**Hazardous Polymerization**  
**Hazardous Polymerization**

Will not occur.

**Section 11 - Toxicological Information****Route of Exposure****Skin Contact**

May cause skin irritation.

**Skin Absorption**

May be harmful if absorbed through the skin.

**Eye Contact**

May cause eye irritation.

**Inhalation**

Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

**Ingestion**

May be harmful if swallowed.

**Signs and Symptoms of Exposure**

Prolonged exposure can cause: Gastrointestinal disturbances. Nausea, headache, and vomiting.

**RTECS Number:** EK0380000

**Toxicity Data**

Oral - Rat: 16000 mg/kg (LD50)

Intraperitoneal - Mouse: 4192 MG/KG (LD50)

**Section 12 - Ecological Information**

No data available.

**Section 13 - Disposal Considerations****Appropriate Method of Disposal of Substance or Preparation**

Contact a licensed professional waste disposal service to dispose of this material.

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

**Section 14 - Transport Information****DOT**

**Proper Shipping Name:** Combustible liquid, n.o.s.

**UN#:** 1993

**Class:** COMBUSTIBLE LIQUID

**Packing Group:** Packing Group III

**Hazard Label:** None

**PIH:** Not PIH

**IATA**

**Non-Hazardous for Air Transport:** Non-hazardous for air transport.

**Section 15 - Regulatory Information****US Classification and Label Text****US Statements**

Combustible.

**United States Regulatory Information**

**SARA Listed:** No

TSCA Inventory Item: Yes

**Canada Regulatory Information**

**WHMIS Classification**

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: Yes

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**Section 16 - Other Information**

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**Disclaimer**

For R&D use only. Not for drug, household or other uses.

**Warranty**

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. Sigma-Aldrich Inc., 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. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

