



# MATERIAL SAFETY DATA SHEET

## *1,4 BUTANEDIOL*

Version: 1.2

DATE OF ISSUE: 01/04/2006

Date printed: 02/09/2006

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### 1. PRODUCT AND COMPANY IDENTIFICATION

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Product name : 1,4 BUTANEDIOL

Chemical name: 1,4-Butanediol

Use of substance/preparation: No specific information.

Supplier: Chemtura USA Corporation  
Chemtura Corporation (Worldwide HQ)  
199 Benson Road  
Middlebury, CT 06749 USA

Emergency telephone number CHEMTREC (24 hours) 800-424-9300  
Chemtura Corporation Emergency Response  
(24 hours) 800-292-5898  
For additional emergency telephone numbers  
see section 16 of the Safety Data Sheet.

Environmental, Health and Safety Department: 866-430-2775

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### 2. COMPOSITION / INFORMATION ON INGREDIENTS

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INGREDIENT	% BY WEIGHT
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1,4-Butanediol	100
CAS# 110-63-4	

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### 3. HAZARDS IDENTIFICATION

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#### EMERGENCY OVERVIEW

##### CAUTION!

MAY CAUSE EYE AND SKIN IRRITATION.

HARMFUL: DANGER OF SERIOUS DAMAGE TO HEALTH BY PROLONGED EXPOSURE IF SWALLOWED.

HARMFUL IF INHALED OR ABSORBED THROUGH SKIN.

REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING.

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**4. FIRST AID MEASURES**

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**Swallowing**

Do not induce vomiting., Rinse mouth with water., Give two glasses of milk or water at once., Obtain medical attention in all cases.

**Skin contact**

Remove contaminated clothing., Rinse affected skin with copious amounts of water, using a mild cleaning agent., Obtain medical attention if contact has been widespread and prolonged, or if irritation persists.

**Inhalation**

Remove to fresh air., Obtain medical attention immediately.

**Eye contact**

Immediately flush eyes with water and continue washing for several minutes., Obtain medical attention if discomfort persists.

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**5. FIRE-FIGHTING MEASURES**

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**Flash point:** > 300 °F > 149 °C  
**Autoignition** 354 °C ( 670 °F)  
**temperature:**

**NFPA CLASSIFICATION**

Health: 1	Flammability: 1	Reactivity: 0	Special provisions: No data available.
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**Hazardous combustion products**

Oxides of carbon.  
Toxic gases/vapours

**Special fire fighting procedures**

Do not discharge extinguishing waters into streams, rivers and lakes.

**Special protective equipment for firefighters**

Body covering protective clothing, full "turn-out" gear.  
Self-contained breathing apparatus.

**Extinguishing media**

Suitable: Large fires:  
- alcohol-type foam or universal-type foams  
Small fires:  
- CO2  
- dry chemical

Unsuitable: - water jets



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### Unusual fire and explosion hazards

Vapors from this material may settle in low or confined areas or travel a long distance to an ignition source and flash back explosively., Containers may burst if overheated., This material may produce a floating fire hazard.

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## 6. ACCIDENTAL RELEASE MEASURES

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### Personal precautions

Wear suitable protective equipment., Avoid contact with eyes and skin.

### Environmental precautions

Prevent from entering sewer system, surface water or soil.

### Methods for cleaning up

Observe government regulations.

#### Small spills

Absorb on inert material such as sand, earth, vermiculite.  
Collect for disposal.

#### Large spills

Dike to contain spill.  
Pump excess material into suitable container (metal drums, metal tank, or such).

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## 7. HANDLING AND STORAGE

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### HANDLING

#### Handling precautions

Do not get in eyes., Avoid prolonged or repeated contact with skin., Avoid breathing vapor., Use with adequate ventilation., Wash thoroughly after handling.

### STORAGE

#### Storage requirements

Store in a cool, dry place.

#### Further information on storage

Keep container tightly closed., 25 - 30°C (77 - 86°F)

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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### EXPOSURE LIMIT VALUES

No other exposure limits have been established

### PERSONAL PROTECTION

#### Respiratory protection

Self-contained breathing apparatus in high vapor concentrations.



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### Hand protection / protective gloves

Chemical resistant protective gloves

### Eye protection

Safety glasses with side shields.

### Skin protection

Wear protective clothing, such as long sleeves to minimize skin contact.

### Other protective equipment

Eye bath, Safety shower

## ENGINEERING CONTROLS

### Ventilation

General (mechanical) room ventilation is expected to be satisfactory., Special, local ventilation is needed at points where vapors can be expected to escape to the workplace air.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

Physical state	Liquid or solid
Color	Transparent colorless to white
Odor	Slight

### OTHER PROPERTIES

Boiling point	(boiling point) (boiling point) 228 °C 442 °F
Melting point	Melting point 20 °C
pH	~ 7
Specific gravity (H2O=1)	~1 at 4 °C
Density	~ 1 g/cm3 at 25 °C
Solubility in water	Complete
Flash point	> 300 °F > 149 °C
Autoignition temperature	354 °C ( 670 °F)



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### 10. STABILITY AND REACTIVITY

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**Stability:** This product is stable under normal storage and handling conditions.

**Stability - Conditions to avoid**

Exposure to heat.

Keep away from all sources of ignition such as flames, sparks, and static electricity.

**Incompatible materials**

Strong oxidizing agents.

**Hazardous combustion products**

Oxides of carbon.

Toxic gases/vapours

**Hazardous polymerization:** Will not occur.

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### 11. TOXICOLOGICAL INFORMATION

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#### SWALLOWING

**Test results**

Acute toxicity: LD50 Rat  
Result: 1,525 mg/kg

#### SKIN ABSORPTION

**Test results**

Acute toxicity: LD50 - Rabbit  
Result: > 2,000 mg/kg

#### INHALATION

**Test results**

Acute toxicity: LC50 - Rat  
Result: > 5.1 mg/l  
Exposure time: 4 h  
Remark: Aerosol

#### MUTAGENICITY

Assessment Negative

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### 12. ECOLOGICAL INFORMATION

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**Biodegradation:** Remark: Readily biodegradable.

### AQUATIC TOXICITY

Acute toxicity fish: - LC50 - Common carp (Cyprinus carpio)  
Result: > 1,240 mg/l  
Exposure time: 96 h

Aquatic toxicity to plants: - EC50 - Scenedesmus subspicatus  
Result: > 1,000 mg/l  
Exposure time: 72 h

Acute toxicity to aquatic invertebrates: - EC50 - Water flea (Daphnia magna)  
Result: 813 mg/l  
Exposure time: 48 h

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### 13. DISPOSAL CONSIDERATIONS

**General:** Dispose of in accordance with appropriate Federal, State, and local regulations., Avoid discharge to sewers and natural waters.

**Non-cleaned packages**

Empty drums should be decontaminated and either passed to an approved drum reconditioner or destroyed., Containers that cannot be cleaned must be treated as waste.

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### 14. TRANSPORT INFORMATION

#### DOT Classification

This product is not regulated by DOT.

#### IMDG Classification

This product is not regulated by IMDG.

#### ICAO Classification

This product is not regulated by ICAO.

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### 15. REGULATORY INFORMATION

Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of hazardous substances equal to or greater than the reportable quantities (RQ's) in 40CFR302.4.

Components present in this product at a level which could require reporting under the statute are:



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Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQ's) and release reporting based on Reportable Quantities (RQ's) in 40CFR355 (used for SARA 302 and 304).

Components present in this product at a level which could require reporting under the statute are:

\*\*\*\* NONE \*\*\*\*

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40CFR372 (for SARA 313). This information must be included in MSDS's that are copied and distributed for this material.

Components present in this product at a level which could require reporting under the statute are:

\*\*\*\* NONE \*\*\*\*

### New Jersey Worker and Community Right-To-Know Act (Labeling Requirements)

Chemical name

1,4-Butanediol

CAS#

110-63-4

New Jersey TS Number

EPA Hazard Categories (SARA 311, 312): Immediate Health Hazard

### California Proposition 65

\*\*\*\* NONE \*\*\*\*

### CHEMICAL INVENTORY

Canada: This product is on the DSL.  
Europe: The ingredients of this mixture are on the EINECS inventory.  
United States: This product is on the TSCA inventory.  
Australia: This product is on the AICS inventory.  
China: This product is on the IECSC Inventory.  
Japan: This product is on the ENCS inventory.  
Korea: This product is listed on the Existing Chemicals List (ECL).  
Philippines: This product is on the PICCS.

### FDA

#### Food additive

No data available.

#### Food contact

No data available.

#### Cosmetics

No data available.

#### Pharmaceuticals

No data available.

## 16. OTHER INFORMATION



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### FURTHER INFORMATION

MAY BE ON THE INVENTORY LIST BUT NOT NECESSARILY REGISTERED, (Korea, China, New Zealand) CONSULT REGULATORY SPECIALIST.

### Emergency Telephone Numbers

Latin America:	All	+44 (0)208 762 8322
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### HMIS RATING

Health: 1	Flammability: 1	Reactivity: 0	PPI: X
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STP	Standard temperature and pressure
W/W	Weight/Weight 0 (HMIS)
1 (HMIS)	Slight hazard
2 (HMIS)	Moderate hazard
3 (HMIS)	Serious hazard
4 (HMIS)	Severe hazard
X (HMIS)	Personal protection rating to be supplied by user depending on use conditions

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