

Name:	1 4-Butanediol 99+% Material Safety Data Sheet
Synonym:	1,4-Butylene Glycol
CAS:	110-63-4

Section 1 - Chemical Product

MSDS Name: 1 4-Butanediol 99+%

Synonym: 1,4-Butylene Glycol.

Section 2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	content	EINECS#
110-63-4	1,4-BUTANEDIOL	99+	203-786-5

Hazard Symbols: XN

Risk Phrases: 22

Section 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Harmful if swallowed.

Potential Health Effects

Eye:

May cause eye irritation.

Skin:

May cause skin irritation.

Ingestion:

May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause cardiac disturbances.

May cause kidney failure. May be harmful if swallowed.

Inhalation:

May cause respiratory tract irritation. May cause effects similar to those described for ingestion. Inhalation of high concentrations may cause narcotic effects.

Chronic:

Chronic exposure may cause kidney damage.

Section 4 - FIRST AID MEASURES

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper

and lower eyelids. Get medical aid.

Skin:

Get medical aid if irritation develops or persists. Wash clothing before reuse. Flush skin with plenty of soap and water.

Ingestion:

Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water.

Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation:

Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician:

Section 5 - FIRE FIGHTING MEASURES

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Containers may explode when heated.

Extinguishing Media:

Use water spray, dry chemical, carbon dioxide, or chemical foam.

Water spray may cause frothing. Cool containers with flooding quantities of water until well after fire is out.

Section 6 - ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Provide ventilation.

Section 7 - HANDLING and STORAGE

Handling:

Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed.

Avoid ingestion and inhalation.

Storage:

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits CAS# 110-63-4: Germany: 50 ppm TWA; 200 mg/m³ TWA Personal Protective Equipment Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Color: colorless

Odor: Nearly odorless

pH: Not available.

Vapor Pressure: 0.0105 mm Hg @25C

Viscosity: 8.924@20C

Boiling Point: 230 deg C @ 760.00mm Hg

Freezing/Melting Point: 20.1 deg C

Autoignition Temperature: 420 deg C (788.00 deg F)

Flash Point: 121 deg C (249.80 deg F)

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

Decomposition Temperature: >150 deg C

Solubility in water: Soluble.
Specific Gravity/Density: 1.0170g/cm³
Molecular Formula: C₄H₁₀O₂
Molecular Weight: 90.12

Section 10 - STABILITY AND REACTIVITY

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials, ignition sources, excess heat.

Incompatibilities with Other Materials:

Strong oxidizing agents Hazardous Decomposition Products:

Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

RTECS#:

CAS# 110-63-4: EK0525000 LD50/LC50:

CAS# 110-63-4: Oral, mouse: LD50 = 2062 mg/kg; Oral, mouse: LD50 = 2062 mg/kg; Oral, rabbit: LD50 = 2531 mg/kg; Oral, rabbit: LD50 = 2531 mg/kg; Oral, rat: LD50 = 1525 mg/kg; Oral, rat: LD50 = 1525 mg/kg.

Carcinogenicity:

1,4-BUTANEDIOL - Not listed by ACGIH, IARC, or NTP.

Other:

See actual entry in RTECS for complete information.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity:

Effects to non-target species: LC50 (duration unspecified) Salientia sp. tadpole <10,000 mg/l

Section 13 - DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - TRANSPORT INFORMATION

IATA

Not regulated as a hazardous material.

IMO

Not regulated as a hazardous material.

RID/ADR

Not regulated as a hazardous material.

Section 15 - REGULATORY INFORMATION

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 22 Harmful if swallowed.

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 110-63-4: 0

Canada

CAS# 110-63-4 is listed on Canada's DSL List.

CAS# 110-63-4 is not listed on Canada's Ingredient Disclosure List.

US FEDERAL

TSCA

CAS# 110-63-4 is listed on the TSCA inventory.