#### 1-Butanol



### Section 1 Product Description

Product Name: 1-Butanol

**Recommended Use:** Science education applications

Synonyms: N-Butyl Alcohol, Butyl Alcohol, N-Butanol, Butan-1-ol, 1-Hydroxybutane

Distributor: Carolina Biological Supply Company

2700 York Road, Burlington, NC 27215

1-800-227-1150

Chemical Information: 800-227-1150 (8am-5pm (ET) M-F)

Chemtrec: 800-424-9300 (Transportation Spill Response 24 hours)

#### Section 2

### **Hazard Identification**

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

### **DANGER**







Flammable liquid and vapor. Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause respiratory irritation. May cause drowsiness or dizziness.

#### **GHS Classification:**

Serious Eye Damage/Eye Irritation Category 1, Skin Corrosion/Irritation Category 2, Flammable Liquid Category 3, Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 3, Acute Toxicity - Oral Category 4

# Section 3 Composition / Information on Ingredients

 Chemical Name
 CAS #
 %

 1-Butanol
 71-36-3
 100

# Section 4 First Aid Measures

**Emergency and First Aid Procedures** 

**Inhalation:** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Eyes: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy

to do. Continue rinsing.

**Skin Contact:** IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with

water/shower. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical

advice/attention. Take off contaminated clothing and wash before reuse.

**Ingestion:** IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

# Section 5 Firefighting Procedures

**Extinguishing Media:** Use dry chemical, CO2 or appropriate foam.

Fire Fighting Methods and Protection: Firefighters should wear full protective equipment and NIOSH approved self-contained

breathing apparatus.

Fire and/or Explosion Hazards: Vapors may travel back to ignition source. Closed Containers exposed to heat may

explode.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

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#### Section 6

### Spill or Leak Procedures

Steps to Take in Case Material Is Released or Spilled:

Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this SDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill.

**Methods for Clean-up** 

Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation. Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area.

Section 7

# Handling and Storage

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Handling:

Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/.../

equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do no eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye

protection/face protection.

Keep container tightly closed. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Storage:

Keep cool.

Red - Flammables. Store in approved flammable containers. Store away from oxidizing materials. Storage Code:

#### Section 8

#### Protection Information

**ACGIH OSHA PEL** (TWA) **Chemical Name** (TWA) (STEL) (STEL) 20 ppm TWA 100 ppm TWA; 300 1-Butanol N/A N/A mg/m3 TWA

Control Parameters

Local exhaust ventilation or other engineering controls are normally required when **Engineering Measures:** 

handling or using this product to avoid overexposure.

Personal Protective Equipment (PPE):

**Respiratory Protection:** 

Lab coat, apron, eye wash, safety shower.

Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. NIOSH approved air purifying respirator with organic vapor cartridge and HEPA filter.

Respirator Type(s): Eye Protection:

Wear chemical splash goggles when handling this product. Have an eye wash station

available.

Skin Protection: Avoid skin contact by wearing chemically resistant gloves, an apron and other protective

equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving

Gloves: Nitrile, Butyl rubber, Natural rubber, Polyvinyl chloride, Neoprene

#### Section 9

### Physical Data

Formula: C4H9OH Molecular Weight: 74.12 Appearance: Colorless Liquid **Odor: Moderate Sweet Rancid** Odor Threshold: No data available

pH: No data available Melting Point: -90 C **Boiling Point: 118 C** Flash Point: 37 C

Flammable Limits in Air: 1.45 - 11.25%

Vapor Pressure: 7 mm Hg at 25°C Evaporation Rate (BuAc=1): 33 (ether = 1)

Vapor Density (Air=1): 2.6 Specific Gravity: 0.81 Solubility in Water: Soluble Log Pow (calculated): 0.785 Autoignition Temperature: 343 C

**Decomposition Temperature:** No data available

Viscosity: 2.544 cP at 25 C Percent Volatile by Volume: 100%

Section 10 Reactivity Data

**Reactivity:** Not generally reactive under normal conditions.

Chemical Stability: Stable under normal conditions.

Conditions to Avoid: Temperatures above the high flash point of this combustible material in combination with

sparks, open flames, or other sources of ignition.

Incompatible Materials: Strong oxidizing agents, Alkali and Alkaline Metals, Halogens, Mineral acids

Hazardous Polymerization: Will not occur

Section 11 Toxicity Data

**Routes of Entry** Inhalation, ingestion, eye or skin contact.

Symptoms (Acute): Central Nervous System Disorders, Headache, Gastrointestinal,

**Delayed Effects:** Sensitivity to Light

Lachrymation

Central Nervous System Disorders

Liver disorders

Impaired Kidney Function

Acute Toxicity:

Chemical NameCAS NumberOral LD50Dermal LD50Inhalation LC501-Butanol71-36-3Oral LD50 Rat 790Not determinedINHALATION

mg/kg LC50 Rat 8000

PPM 4H

Carcinogenicity:

Chemical Name CAS Number IARC NTP OSHA

No data available

**Chronic Effects:** 

**Mutagenicity:** No evidence of a mutagenic effect.

**Teratogenicity:** No evidence of a teratogenic effect (birth defect).

**Sensitization:** No evidence of a sensitization effect.

**Reproductive:** No evidence of negative reproductive effects.

**Target Organ Effects:** 

Acute: Central Nervous System, Kidneys, Liver

Chronic: No data available

Section 12 Ecological Data

**Overview:** This material is not expected to be harmful to the ecology.

**Mobility:** This material is expected to have high mobility in soil. It absorbs weakly to most soil types.

Persistence: Evaporation into atmosphere

**Bioaccumulation:** Bioconcentration is not expected to occur.

Degradability: No data
Other Adverse Effects: No data

Chemical Name CAS Number Eco Toxicity

1-Butanol 71-36-3 96 HR LC50 PIMEPHALES PROMELAS 1730 - 1910 MG/L

[STATIC]

96 HR LC50 PIMEPHALES PROMELAS 1740 MG/L [FLOW-

THROUGH]

96 HR LC50 LEPOMIS MACROCHIRUS 100000 - 500000 MG/L

[STATIC]

96 HR LC50 PIMEPHALES PROMELAS 1910000 MG/L [STATIC]

48 HR EC50 DAPHNIA MAGNA 1983 MG/L

48 HR EC50 DAPHNIA MAGNA 1897 - 2072 MG/L [STATIC] 96 HR EC50 DESMODESMUS SUBSPICATUS > 500 MG/L 72 HR EC50 DESMODESMUS SUBSPICATUS > 500 MG/L

**Section 13** 

### **Disposal Information**

**Disposal Methods:** Dispose in accordance with all applicable Federal, State and Local regulations. Always

contact a permitted waste disposer (TSD) to assure compliance.

Waste Disposal Code(s): U031 - 1-Butanol

Section 14

### Transport Information

**Ground - DOT Proper Shipping Name:** Air - IATA Proper Shipping Name:

UN1120 UN1120 **Butanols Butanols** Class 3 Class 3 P.G. III P.G. III

Section 15

### **Regulatory Information**

**TSCA Status:** All components in this product are on the TSCA Inventory.

**Chemical Name** CAS **CERCLA RQ CAA 112(2)** § 313 Name § 304 RQ § 302 TPQ Number TQ

1-Butanol 71-36-3 n-Butyl alcohol No 5000 lb final No No

RQ: 2270 kg

final RQ

No California Proposition 65 ingredients California Prop 65:

Section 16

**Additional** Information

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The information provided in this (Material) Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or quarantee as to the suitability of this information to a particular application of the substance covered in the (Material) Safety Data Sheet.

Glossary

ACGIH	American Conference of Governmental	NTP	National Toxicology Program
	Industrial Hygienists	OSHA	Occupational Safety and Health Administration
CAS	Chemical Abstract Service Number	PEL	Permissible Exposure Limit
CERCLA	Comprehensive Environmental Response,	ppm	Parts per million
	Compensation, and Liability Act	RCRA	Resource Conservation and Recovery Act
DOT	U.S. Department of Transportation	SARA	Superfund Amendments and Reauthorization Act
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
N/A	Not Available	TSCA	Toxic Substances Control Act
		IDLH	Immediately dangerous to life and health

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