

# Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.14.2017

Page 1 of 9

**Butanol**

## SECTION 1: Identification

### Product identifier

**Product name:** Butanol

**Product code:** S25209

### Recommended use of the product and restriction on use

**Relevant identified uses:** Not determined or not applicable.

**Uses advised against:** Not determined or not applicable.

**Reasons why uses advised against:** Not determined or not applicable.

### Manufacturer or supplier details

**Manufacturer:**

**Supplier:**

AquaPhoenix Scientific

860 Gitts Run Road

Hanover

PA 17331

(717) 632-1291

Fisher Science Education

6771 Silver Crest Road

Nazareth

PA 18064

800 955-1177

### Emergency telephone number:

**United States**

Emergency Telephone No.: 800-255-3924

## SECTION 2: Hazard(s) identification

### GHS classification:

Flammable liquids, category 3

Acute toxicity (oral), category 4

Skin irritation, category 2

Serious eye damage, category 1

Specific target organ toxicity - single exposure, category 3, respiratory irritation

Specific target organ toxicity - single exposure, category 3, central nervous system

### Label elements

#### Hazard pictograms:



**Signal word:** Danger

### Hazard statements:

H226 Flammable liquid and vapor

H302 Harmful if swallowed

H315 Causes skin irritation

H318 Causes serious eye damage

H335 May cause respiratory irritation

H336 May cause drowsiness or dizziness

### Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking

# Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.14.2017

Page 2 of 9

## Butanol

- P233 Keep container tightly closed
- P240 Ground/bond container and receiving equipment
- P241 Use explosion-proof electrical/ventilating/light/equipment
- P242 Use only non-sparking tools
- P243 Take precautionary measures against static discharge
- P280 Wear protective gloves/protective clothing/eye protection/face protection
- P264 Wash skin thoroughly after handling
- P270 Do not eat, drink or smoke when using this product
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P271 Use only outdoors or in a well-ventilated area
- P303+P361+P353 If on skin (or hair): Immediately remove/take off all contaminated clothing. Rinse skin with water/shower
- P370+P378 In case of fire: Use agents recommended in section 5 for extinction
- P301+P330+P312 IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.
- P321 Specific treatment (see supplemental first aid instructions on this label).
- P362 Take off contaminated clothing and wash before reuse
- P302+P352 If on skin: Wash with soap and water
- P332+P313 If skin irritation occurs: Get medical advice/attention
- P305+P351+P338+P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
- P304+P340+P312 If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell
- P405 Store locked up
- P403+P233 Store in a well ventilated place. Keep container tightly closed
- P501 Dispose of contents and container as instructed in Section 13

**Hazards not otherwise classified:** None

## SECTION 3: Composition/information on ingredients

Identification	Name	Weight %
CAS number: 71-36-3	n-Butyl Alcohol	>99

**Additional Information:** None

## SECTION 4: First aid measures

### Description of first aid measures

#### General notes:

Not determined or not applicable.

#### After inhalation:

- Loosen clothing as necessary and position individual in a comfortable position
- Maintain an unobstructed airway
- Get medical advice/attention if you feel unwell
- Move exposed individual to fresh air
- Call a POISON CONTROL CENTER or seek medical attention if you feel unwell

#### After skin contact:

- Rinse affected area with soap and water
- If symptoms develop or persist, seek medical attention
- Wash affected area with soap and water

# Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.14.2017

Page 3 of 9

## Butanol

Seek medical attention if symptoms develop or persist

### After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes

If symptoms develop or persist, seek medical attention

Remove contact lens(es) if able to do so during rinsing

Immediately call a POISON CONTROL CENTER or seek medical attention

### After swallowing:

Rinse mouth thoroughly

Seek medical attention if irritation, discomfort, or vomiting persists

Call a POISON CONTROL CENTER or seek medical attention if you feel unwell

Do not induce vomiting

Rinse mouth and then drink plenty of water

### Most important symptoms and effects, both acute and delayed

#### Acute symptoms and effects:

Not determined or not applicable.

#### Delayed symptoms and effects:

Not determined or not applicable.

### Immediate medical attention and special treatment

#### Specific treatment:

Not determined or not applicable.

#### Notes for the doctor:

Not determined or not applicable.

## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media:

Use Water (fog only), dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam

#### Unsuitable extinguishing media:

Not determined or not applicable.

### Specific hazards during fire-fighting:

Thermal decomposition can lead to release of irritating gases and vapors

Vapors can flow to distant ignition sources and flashback

Liquid is volatile and may generate an explosive atmosphere

### Special protective equipment for firefighters:

Use typical firefighting equipment, self-contained breathing apparatus, special tightly sealed suit

### Special precautions:

Shut off sources of ignition

Carbon monoxide and carbon dioxide may form upon combustion

Heating causes a rise in pressure, risk of bursting and combustion

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation

Ensure air handling systems are operational

Wear protective eye wear, gloves and clothing

Beware of vapors accumulating to form explosive concentrations

Vapors can accumulate in low areas

# Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.14.2017

Page 4 of 9

## Butanol

### Environmental precautions:

Should not be released into the environment  
Prevent from reaching drains, sewer or waterway

### Methods and material for containment and cleaning up:

Wear protective eye wear, gloves and clothing  
Use spark-proof tools and explosion-proof equipment  
Absorb with non-combustible liquid-binding material (sand, diatomaceous earth (clay), acid binders, universal binders)  
Dispose of contents / container in accordance with local regulations

### Reference to other sections:

Not determined or not applicable.

## SECTION 7: Handling and storage

### Precautions for safe handling:

Use only with adequate ventilation.  
Avoid breathing mist or vapor.  
Do not eat, drink, smoke or use personal products when handling chemical substances.  
Take precautionary measures against electrostatic discharges.  
Use only non-sparking tools.

### Conditions for safe storage, including any incompatibilities:

Keep container tightly sealed.  
Protect from freezing and physical damage.  
Store in a cool, well-ventilated area.  
Store away from all ignition sources (open flames, hot surfaces, direct sunlight, spark sources).

## SECTION 8: Exposure controls/personal protection

Only those substances with limit values have been included below.

### Occupational Exposure limit values:

Country (Legal Basis)	Substance	Identifier	Permissible concentration
United States (OSHA)	n-Butyl Alcohol	71-36-3	OSHA PEL Time Weighted Avg: 100 ppm
ACGIH	n-Butyl Alcohol	71-36-3	ACGIH TLV 8 Hour TWA: 20 ppm
NIOSH	n-Butyl Alcohol	71-36-3	NIOSH IDLH: 1400 ppm

### Biological limit values:

No biological exposure limits noted for the ingredient(s).

### Information on monitoring procedures:

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls.  
Biological monitoring may also be appropriate for some substances.

### Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling.  
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.  
Use explosion-proof ventilation equipment.

### Personal protection equipment

#### Eye and face protection:

# Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.14.2017

Page 5 of 9

## Butanol

Safety goggles or glasses, or appropriate eye protection.

### Skin and body protection:

Select glove material impermeable and resistant to the substance.

Wear appropriate clothing to prevent any possibility of skin contact.

### Respiratory protection:

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

### General hygienic measures:

Avoid contact with skin, eyes and clothing.

Wash hands before breaks and at the end of work.

Wash contaminated clothing before reuse.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

Appearance	Clear, colorless liquid
Odor	Alcohol
Odor threshold	Not determined or not available.
pH	Not determined or not available.
Melting point/freezing point	- 89.5°C
Initial boiling point/range	116°C
Flash point (closed cup)	35°C
Evaporation rate	0.46
Flammability (solid, gas)	Flammable liquid
Upper flammability/explosive limit	11.2 %
Lower flammability/explosive limit	1.4 %
Vapor pressure	6.7 mm Hg
Vapor density	Not determined or not available.
Density	Not determined or not available.
Relative density	0.81 g/cm <sup>3</sup>
Solubilities	Slightly soluble available.
Partition coefficient (n-octanol/water)	Not determined or not available.
Auto/Self-ignition temperature	343°C
Decomposition temperature	Not determined or not available.
Dynamic viscosity	Not determined or not available.
Kinematic viscosity	Not determined or not available.
Explosive properties	Not determined or not available.
Oxidizing properties	Not determined or not available.

### Other information

Molecular Weight	74.12
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## SECTION 10: Stability and reactivity

### Reactivity:

Does not react under normal conditions of use and storage.

# Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.14.2017

Page 6 of 9

## Butanol

### Chemical stability:

Stable under normal conditions of use and storage.

### Possibility of hazardous reactions:

None under normal conditions of use and storage.

### Conditions to avoid:

Excess heat, Incompatible Materials, Confined spaces, Ignition source, or Flame

### Incompatible materials:

Strong oxidizers, strong acids, alkali metals, halogens, heat, sparks, open flames.

### Hazardous decomposition products:

Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

## SECTION 11: Toxicological information

### Acute toxicity

**Assessment:** Harmful if swallowed

**Product data:** No data available.

**Substance data:**

Name	Route	Result
n-Butyl Alcohol	oral	LD50 - Rat - 790 mg/kg

### Skin corrosion/irritation

**Assessment:** Causes skin irritation

**Product data:** No data available.

**Substance data:**

Name	Result
n-Butyl Alcohol	Irritant to skin and mucous membranes

### Serious eye damage/irritation

**Assessment:** Causes serious eye damage

**Product data:** No data available.

**Substance data:**

Name	Result
n-Butyl Alcohol	Irritating to eyes, nose and throat.

### Respiratory or skin sensitization

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

### Carcinogenicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

**International Agency for Research on Cancer (IARC):** None of the ingredients are listed.

**National Toxicology Program (NTP):** None of the ingredients are listed.

### Germ cell mutagenicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

### Reproductive toxicity

# Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.14.2017

Page 7 of 9

## Butanol

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

### Specific target organ toxicity (single exposure)

**Assessment:** May cause respiratory irritation May cause drowsiness or dizziness

**Product data:** No data available.

**Substance data:**

Name	Result
n-Butyl Alcohol	Component may affect the respiratory and central nervous system through single exposure.
	May cause drowsiness or dizziness

### Specific target organ toxicity (repeated exposure)

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

### Aspiration toxicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

**Information on likely routes of exposure:** No data available.

**Symptoms related to the physical, chemical and toxicological characteristics:** No data available.

**Other information:** No data available.

## SECTION 12: Ecological information

### Acute (short-term) toxicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

### Chronic (long-term) toxicity

**Product data:** No data available.

**Substance data:** No data available.

### Persistence and degradability

**Product data:** No data available.

**Substance data:** No data available.

### Bioaccumulative potential

**Product data:** No data available.

**Substance data:** No data available.

### Mobility in soil

**Product data:** No data available.

**Substance data:** No data available.

**Other adverse effects:** No data available.

## SECTION 13: Disposal considerations

### Disposal methods:

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities

# Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200


Initial preparation date: 11.14.2017

Page 8 of 9


Butanol

## SECTION 14: Transport information


### United States Transportation of dangerous goods (49 CFR DOT)

UN number	UN 1120
UN proper shipping name	Butanols
UN transport hazard class(es)	3 
Packing group	III
Environmental hazards	None
Special precautions for user	None

### International Maritime Dangerous Goods (IMDG)

UN number	UN 1120
UN proper shipping name	Butanols
UN transport hazard class(es)	3 
Packing group	III
Environmental hazards	None
Special precautions for user	None

### International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

UN number	UN 1120
UN proper shipping name	Butanols
UN transport hazard class(es)	3 
Packing group	III
Environmental hazards	None
Special precautions for user	None

## SECTION 15: Regulatory information

### United States regulations

#### Inventory listing (TSCA):

71-36-3	n-Butyl Alcohol	Listed
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**Significant New Use Rule (TSCA Section 5):** Not determined.

**Export notification under TSCA Section 12(b):** Not determined.

#### SARA Section 311/312 hazards:

Acute	Chronic	Fire	Pressure	Reactive
No	No	No	No	No

**SARA Section 302 extremely hazardous substances:** Not determined.

#### SARA Section 313 toxic chemicals:

71-36-3	n-Butyl Alcohol	Not Listed
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# Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.14.2017

Page 9 of 9

## Butanol

### CERCLA:

71-36-3	n-Butyl Alcohol	Listed	5000 lbs.
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### RCRA:

71-36-3	n-Butyl Alcohol	Listed	U031
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**Section 112(r) of the Clean Air Act (CAA):** Not determined.

### Massachusetts Right to Know:

71-36-3	n-Butyl Alcohol	Listed
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### New Jersey Right to Know:

71-36-3	n-Butyl Alcohol	Listed
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### New York Right to Know:

71-36-3	n-Butyl Alcohol	Listed
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### Pennsylvania Right to Know:

71-36-3	n-Butyl Alcohol	Listed
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**California Proposition 65:** None of the ingredients are listed.

## SECTION 16: Other information

**Abbreviations and Acronyms:** None

### Disclaimer:

This product has been classified in accordance with OSHA HCS 2012 guidelines. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

**NFPA:** 2-3-0

**HMIS:** 2-3-0

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**End of Safety Data Sheet**