

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 1 of 8

Butanol, Reagent Grade

SECTION 1: Identification of the substance/mixture and of the supplier

Product name: Butanol, Reagent Grade

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: S25209

Recommended uses of the product and restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific, Inc
9 Barnhart Drive, Hanover, PA 17331
(717) 632-1291

Supplier Details:

Fisher Science Education
6771 Silver Crest Road, Nazareth, PA 18064
(724)517-1954

Emergency telephone number:

Fisher Science Education
Emergency Telephone No.: 800-535-5053

SECTION 2: Hazards identification

Classification of the substance or mixture:



Flammable

Flammable liquids, category 3



Irritant

Acute toxicity (oral, dermal, inhalation), category 4

Skin irritation, category 2

Specific target organ toxicity following single exposure, category 3



Corrosive

Serious eye damage, category 1

Flam. Liq. 3.
Acute Tox. 4.
Skin Irrit. 2.
Eye Dam. 1.
STOT SE 3.

Signal word: Danger

Hazard statements:

Flammable liquid and vapour.
Harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.
May cause respiratory irritation.

Precautionary statements:

If medical advice is needed, have product container or label at hand.

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 2 of 8

Butanol, Reagent Grade

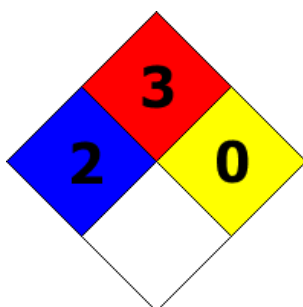
Keep out of reach of children.
Read label before use.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Use only outdoors or in a well-ventilated area.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/light/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash skin thoroughly after handling.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
In case of fire: Use agents recommended in section 5 for extinction.
Specific treatment (see supplemental first aid instructions on this label).
Take off contaminated clothing and wash before reuse.
IF ON SKIN: Wash with soap and water.
If skin irritation occurs: Get medical advice/attention.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.
Continue rinsing.
Store in a well ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents and container to an approved waste disposal plant.

Other Non-GHS Classification:

WHMIS



NFPA/HMIS



NFPA SCALE (0-4)

Health	2
Flammability	3
Physical Hazard	0
Personal Protection	X

HMIS RATINGS (0-4)

SECTION 3: Composition/information on ingredients

Ingredients:

CAS 71-36-3

Butanol

>99 %

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 3 of 8

Butanol, Reagent Grade

Percentages are by weight

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

Loosen clothing as necessary and position individual in a comfortable position. Move exposed to fresh air. Give artificial respiration if necessary. If breathing is difficult give oxygen. Get medical assistance if cough or other symptoms appear.

After skin contact:

Rinse/flush exposed skin gently using soap and water for 15-20 minutes. Seek medical advice if discomfort or irritation persists.

After eye contact:

Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Seek medical attention if irritation, discomfort, or vomiting persists.

Most important symptoms and effects, both acute and delayed:

Irritation. Headache. Nausea. Shortness of breath.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention provide SDS document to physician. Physician should treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing agents:

Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

Unsuitable extinguishing agents: None

Special hazards arising from the substance or mixture:

Oxides of carbon. Flash back possible over considerable distance. Thermal decomposition can lead to release of irritating gases and vapors.

Advice for firefighters:

Protective equipment:

Wear protective eyewear, gloves, and clothing. Refer to Section 8. Use NIOSH-approved respiratory protection/breathing apparatus.

Additional information (precautions):

Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Ensure that air-handling systems are operational.

Environmental precautions:

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

Methods and material for containment and cleaning up:

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 4 of 8

Butanol, Reagent Grade

Wear protective eyewear, gloves, and clothing. Refer to Section 8. Always obey local regulations. Containerize for disposal. Refer to Section 13. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Keep in suitable closed containers for disposal.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Avoid contact with skin, eyes, and clothing. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Follow proper disposal methods. Refer to Section 13. Do not eat, drink, smoke, or use personal products when handling chemical substances.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Keep away from food and beverages. Protect from freezing and physical damage. Provide ventilation for containers. Keep container tightly sealed. Store away from incompatible materials.

SECTION 8: Exposure controls/personal protection



Control Parameters:

71-36-3, Butanol, ACGIH TLV TWA 20 ppm.
71-36-3, Butanol, OSHA PEL TWA 300.0 mg/m³.
71-36-3, Butanol, NIOSH TWA 150.0 mg/m³.

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.

Respiratory protection: Not required under normal conditions of use. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. When necessary use NIOSH approved breathing equipment.

Protection of skin: Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing.

Eye protection: Wear equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses or goggles are appropriate eye protection.

General hygienic measures: Perform routine housekeeping. Wash hands before breaks and at the end of work. Avoid contact with skin, eyes, and clothing. Before wearing wash contaminated clothing.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear, colorless liquid.	Explosion limit lower:	Not Determined
		Explosion limit upper:	Not Determined
Odor:	Alcohol	Vapor pressure at 20°C:	6.7 mm Hg

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 5 of 8

Butanol, Reagent Grade

Odor threshold:	Not Determined	Vapor density:	2.6
pH-value:	Not Determined	Relative density:	0.81
Melting/Freezing point:	- 89.5 C	Solubilities:	Slightly in water.
Boiling point/Boiling range:	116 C	Partition coefficient (n-octanol/water):	Not Determined
Flash point (closed cup):	35 C	Auto/Self-ignition temperature:	Not Determined
Evaporation rate:	0.46	Decomposition temperature:	Not Determined
Flammability (solid, gaseous):	Flammable	Viscosity:	a. Kinematic: Not Determined b. Dynamic: Not Determined
Density at 20°C:	Not Determined		

SECTION 10: Stability and reactivity

Reactivity:

Nonreactive under normal conditions.

Chemical stability:

Stable under normal conditions.

Possible hazardous reactions:

None under normal processing.

Conditions to avoid:

Incompatible materials.

Incompatible materials:

None

Hazardous decomposition products:

None

SECTION 11: Toxicological information

Acute Toxicity:

Oral:

790 mg/kg LD50 rat:

Inhalation:

8000 ppm/4H LC50 rat:

Chronic Toxicity: No additional information.

Corrosion Irritation: No additional information.

Sensitization: No additional information.

Numerical Measures: No additional information.

Carcinogenicity: No additional information.

Mutagenicity: No additional information.

Reproductive Toxicity: No additional information.

SECTION 12: Ecological information

Ecotoxicity:

LC50 - Pimephales promelas (fathead minnow) : 1,840 mg/l - 96 h

EC50 - Daphnia magna (Water flea): 1,983 mg/l - 48 h

Persistence and degradability: No additional information.

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 6 of 8

Butanol, Reagent Grade

Bioaccumulative potential:

Bioconcentration factor (BCF) : 0.38. Bioaccumulation *Oncorhynchus mykiss* (rainbow trout) - 24 h - 921 mg/l.

Mobility in soil: No additional information.

Other adverse effects: No additional information.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Contact a licensed professional waste disposal service to dispose of this material. Dispose of empty containers as unused product. Product or containers must not be disposed with household garbage. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations. Ensure complete and accurate classification.

SECTION 14: Transport information

US DOT

UN Number:

ADR, ADN, DOT, IMDG, IATA

1120

Limited Quantity Exception:

None

Bulk:

RQ (if applicable): None

Proper shipping Name: Butanols.

Hazard Class: 3

Packing Group: III.

Marine Pollutant (if applicable): No additional information.

Comments: None

Non Bulk:

RQ (if applicable): None

Proper shipping Name: Butanols.

Hazard Class: 3

Packing Group: III.

Marine Pollutant (if applicable): No additional information.

Comments: None



SECTION 15: Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

Acute, Chronic, Fire

SARA Section 313 (Specific toxic chemical listings):

71-36-3 Butanol.

RCRA (hazardous waste code):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act):

All ingredients are listed.

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 7 of 8

Butanol, Reagent Grade

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

None of the ingredients are listed.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

SECTION 16: Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

GHS Full Text Phrases: None

Abbreviations and Acronyms:

IMDG International Maritime Code for Dangerous Goods.
PNEC Predicted No-Effect Concentration (REACH).
CFR Code of Federal Regulations (USA).
SARA Superfund Amendments and Reauthorization Act (USA).
RCRA Resource Conservation and Recovery Act (USA).
TSCA Toxic Substances Control Act (USA).
NPRI National Pollutant Release Inventory (Canada).
DOT US Department of Transportation.
IATA International Air Transport Association.
GHS Globally Harmonized System of Classification and Labelling of Chemicals.
ACGIH American Conference of Governmental Industrial Hygienists.
CAS Chemical Abstracts Service (division of the American Chemical Society).

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 8 of 8

Butanol, Reagent Grade

NFPA National Fire Protection Association (USA).

HMIS Hazardous Materials Identification System (USA).

WHMIS Workplace Hazardous Materials Information System (Canada).

DNEL Derived No-Effect Level (REACH).

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