SAFETY DATA SHEET

Version: v1 Revision Date: 2024-10-17 Print Date: 2024-10-17

SECTION 1:Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

| Product name | : | 2-Butanethiol |
|----------------|---|---------------|
| Product Number | : | B102330 |
| Brand | : | aladdin |
| CAS-No. | : | 513-53-1 |

1.2 Relevant identified uses of the substance or mixture and uses advised against

| Identified uses | : | Laborator | v chemicals.Manufacture of substances |
|-----------------|---|-----------|---------------------------------------|
| | | Laborator | |

1.3 Company

| Company | : ALADDIN SCIENTIFIC CORPORATION |
|----------------------|----------------------------------|
| Address | : 14078 Meridian Parkway, |
| Riverside, CA. 92518 | |
| Telephone | : +1 (833) 552-7181 |
| Fax | : no data available |
| | |

1.4 Emergency telephone number

| CHEMTREC®, Inside the USA | : 1-800-424-9300 |
|----------------------------|------------------|
| CHEMTREC®, Outside the USA | : |

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture GHS Classification in accordance with 29 CFR 1910 (OSHA HCS) Flammable liquids (Category 2), H225 Serious eye damage/eye irritation (Category 2A), H319

Skin sensitization (Category 1), H317

Specific target organ toxicity - single exposure (Category 3), respiratory tract irritation, H335

Short-term (acute) aquatic hazard (Category 2), H401

Long-term (chronic) aquatic hazard (Category 2), H411

2.2 GHS Label elements, including precautionary statements

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| Pictogram |
|-----------|
|-----------|

Signal word



| Hazard statement(s) | |
|----------------------------|--|
| H225 | Highly Flammable liquid and vapor |
| H317 | May cause an allergic skin reaction |
| H319 | Causes serious eye irritation |
| H335 | May cause respiratory irritation |
| H411 | Toxic to aquatic life with long lasting effects |
| Precautionary statement(s) | |
| P210 | Keep away from heat, hot surface, sparks, open flames and other ignition |
| | sources No smoking. |
| P233 | Keep container tightly closed. |
| P240 | Ground/bond container and receiving equipment. |
| P241 | Use explosion-proof [electrical/ventilating/lighting//] equipment. |
| P242 | Use only non-sparking tools. |
| P243 | Take precautionary measures against static discharge. |
| P261 | Avoid breathing dust/fume/gas/mist/vapors/spray. |
| P264 | Wash hands [and] thoroughly after handling. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN |
| | with water [or shower]. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact |
| | lenses if present and easy to do - continue rinsing. |
| P333+P313 | IF SKIN irritation or rash occurs: Get medical advice/attention. |
| P337+P313 | IF eye irritation persists: Get medical advice/attention. |
| P370+P378 | In case of fire: Use to extinguish. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container to an approved waste disposal plant. |
| P304+P340+P312 | IF INHALED: Remove person to fresh air and keep comfortable for breathing.Call |
| | a POISON CENTER or doctor. if you feel unwell. |

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

SECTION 3: Composition/information on ingredients

3.1 Substances



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| Component | Classification | Concentration |
|------------------|--------------------------------|--------------------------------|
| EC-NO. | : 208-165-2 | |
| CAS No. | : 513-53-1 | |
| Molecular weight | : 90.19 | |
| Formula | : C4H10S | |
| mercaptan;1-Meth | yl-1-propanthiol | |
| Synonyms | : sec-Butyl Mercaptan;Mercapta | n C4;2-Mercaptobutane; 2-Butyl |

2-Butanethiol

no data available

≥95%

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

In case of skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

In case of eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

If swallowed

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

no data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media Use dry chemical, carbon dioxide or alcohol-resistant foam. Unsuitable extinguishing media no data available

5.2 Special hazards arising from the substance or mixture



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Carbon oxidesCombustible. Fire may cause evolution of: Sulfur oxides Pay attention to flashback. Vapors are heavier than air and may spread along floors. Development of hazardous combustion gases or vapours possible in the event of fire. Forms explosive mixtures with air at ambient temperatures.

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

no data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Operators should be specially trained and strictly abide by the operating procedures. Operation and disposal should be carried out in a place with local ventilation or general ventilation facilities. Avoid eye and skin contact and avoid breathing vapor. See Section 8 for personal protective measures. Keep away from fire and heat sources, and smoking is strictly prohibited in the workplace. Use explosion-proof ventilation systems and equipment. If canning is required, the flow rate should be controlled, and there should be a grounding device to prevent the accumulation of static electricity. Avoid contact with incompatible substances such as oxidizing agents (see section 10 for incompatible substances). When handling, it should be lightly loaded and unloaded to prevent damage to packaging and containers. Empty containers may be harmful residues. Wash hands after use and prohibit eating or drinking in the workplace. Equipped with the corresponding variety and quantity of fire fighting equipment and leakage emer

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, ventilated warehouse.

7.3 Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU)2016/425 and the standard EN 374 derived from it.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU).

Control of environmental exposure

If safety requires, prevent further leakage or spillage. Do not let the product enter the sewer.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance

c) Odour Threshold

b) Odour

form: liquid color: Colorless to light yellow no data available no data available

d) pH no data available

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| e) Melting point/freezing point f) Initial boiling point and boiling range g) Flash point | -165 °C 84.6-85.2°C -23°C |
|---|--|
| h) Evaporation rate | no data available |
| i) Flammability (solid, gas) | no data available |
| j) Upper/lower flammability or | |
| explosive limits | no data available |
| k) Vapour pressure | no data available |
| l) Vapour density | no data available |
| m) Relative density | no data available |
| n) Water solubility | Solubility in water: Practically insoluble; Very soluble in Alcohol, Ether |
| o) Partition coefficient: n-octanol/wate | er no data available |
| p) Auto-ignition temperature | no data available |
| q) Decomposition temperature | no data available |
| r) Viscosity | no data available |
| s) Explosive properties N | no data available |
| t) Oxidizing properties N | no data available |
| | |

9.2 Other safety information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Violent reactions possible with: Strong oxidizing agents Reducing agents Strong bases Alkali metals Generates dangerous gases or fumes in contact with: Strong acids Risk of explosion with: Nitric acid

10.4 Conditions to avoid

Warming.

10.5 Incompatible materials

Copper, Copper alloys, rubber, various plastics

10.6 Hazardous decomposition products

no data available

SECTION 11: Toxicological information

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11.1 Information on toxicological effects

Acute toxicity

Skin corrosion/irritation no data available Serious eye damage/eye irritation no data available Respiratory or skin sensitisation no data available Germ cell mutagenicity no data available Carcinogenicity no data available Reproductive toxicity no data available Specific target organ toxicity - single exposure no data available Specific target organ toxicity - repeated exposure no data available Aspiration hazard no data available Additional Information Nausea, Headache, Vomiting, Weakness, Confusion., Dizziness

SECTION 12: Ecological information

12.1 Toxicity

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects



Discharge into the environment must be avoided.

SECTION 13:

13.1 Disposal considerations

Product

Recycle to process, if possible. Consult your local regional authorities and an expert of disposal. You may be able to dissolve or mix material with a combustible solvent and little by little burn in a chemical incinerator equipped with an afterburner and scrubber system. If a large amount of the substance is burned at a time, an explosion may occur. Observe all federal, state and local regulations when disposing of the substance.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

| DOT (US) | | | | |
|---------------------------------------|----------------------------------|-----------------------------------|--|--|
| UN number: 2347 | Packing group: II | Class: 3 | | |
| Proper shipping name: BUTYL | Reportable Quantity(RQ): no data | Poison Inhalation Hazard: no data | | |
| MERCAPTAN | available | available | | |
| Environmental Hazards: no | | | | |
| IMDG | | | | |
| UN number: 2347 | Packing group: II | EMS-No: no data available | | |
| Proper shipping name: BUTYL MERCAPTAN | | | | |
| ΙΑΤΑ | | | | |
| UN number: 2347 | Packing group: II | Class: 3 | | |
| Proper shipping name: BUTYL MERCAPTAN | | | | |

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

SECTION 16: Other information

| Prepared By | Regulatory Affairs ALADDIN SCIENTIFIC CORPORATION Email: QualityAssurance@aladdinsci.com |
|------------------|--|
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