

SAFETY DATA SHEET

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

1.1 Product identifiers

Product name sec-Butyl Alcohol
CAS number 78-92-2
Synonyms sec-Butanol, 2-Butanol

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

Identified uses Laboratory chemicals.

1.3 Details of the supplier of the safety data sheet

Company Lab Alley, LLC
 12501 Pauls Valley Road
 Austin, Texas 78737
 U.S.A.

Telephone 512-668-9918
Fax 512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC


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 3)
Serious Eye Damage/Eye Irritation (Category 2)
Specific target organ toxicity - single exposure (Category 3)
Target Organs - Respiratory system, Central nervous system (CNS)

2.2 GHS Label elements, including precautionary statements

Pictogram	
Signal Word	Warning.
Hazard statements	Flammable liquid and vapor Causes serious eye irritation May cause respiratory irritation May cause drowsiness or dizziness
Precautionary statements	Wash face, hands and any exposed skin thoroughly after handling Avoid breathing dust/fume/gas/mist/vapors/spray Use only outdoors or in a well-ventilated area Keep away from heat/sparks/open flames/hot surfaces. - No smoking Keep container tightly closed Ground/bond container and receiving equipment Use explosion-proof electrical/ventilating/lighting equipment Use only non-sparking tools Take precautionary measures against static discharge Wear protective gloves/protective clothing/eye protection/face protection Keep cool 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 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention In case of fire: Use CO2, dry chemical, or foam for extinction Store in a well-ventilated place. Keep container tightly closed Store locked up Dispose of contents/container to an approved waste disposal plant

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

None identified.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
sec-butyl alcohol	sec-Butanol, 2-Butanol	78-92-2	> 98%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled	Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention.
In case of skin contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.
In case of eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
If swallowed	Do NOT induce vomiting. Get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

4.3 Indication of any immediate medical attention and special treatment needed

Note to Physician: Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Water spray, carbon dioxide (CO ₂), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.
Unsuitable extinguishing media	No information available.

5.2 Specific hazards arising from the substance or mixture

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

5.3 Special protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

5.4 Further information

Flash Point	24 °C / 75.2 °F
Autoignition Temperature	390 °C / 734 °F

Explosion limits

Upper 9.8% @ 100 °C

Lower 1.7% @ 100 °C

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

NFPA

Health	Flammability	Instability	Physical hazards
2	3	0	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges.

6.2 Environmental precautions

Avoid release to the environment. See Section 12 for additional Ecological Information.

6.3 Methods and materials for containment and cleaning up

Remove all sources of ignition. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Use spark-proof tools and explosion-proof equipment.

6.4 Reference to other sections

See Section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat, sparks and flame. May form explosive peroxides on prolonged storage.

Incompatibilities

Strong oxidizing agents. Acid chlorides. Acid anhydrides.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Component	Type	Value	
sec-Butyl alcohol	TWA	150 ppm	450 mg/m ³

US. ACGIH Threshold Limit Values

Component	Type	Value	
sec-Butyl alcohol	TWA	100 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value	
sec-Butyl alcohol	IDLH	2000 ppm	
	TWA	100 ppm	305 mg/m ³
	STEL	150 ppm	455 mg/m ³

Biological occupational exposure limits

No information available.

8.2 Exposure controls

Appropriate engineering controls

Ensure that eyewash stations and safety showers are close to the workstation location.
Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment.

Personal protective equipment

Eye/face protection

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 protection

Wear appropriate protective gloves.

Body Protection

Wear appropriate clothing to prevent skin exposure.

Respiratory protection

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.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	Sweet
Odor Threshold	No information available.
pH	No information available.
Melting Point/Range	-115 °C / -175 °F
Boiling Point/Range	99 °C / 210.2 °F @ 760 mmHg
Evaporation Rate	No information available.
Flammability (solid)	No information available.
Flammability or explosive limit	
Upper	9.8% @ 100 °C
Lower	1.7% @ 100 °C
Vapor Pressure	17 mbar @ 20 °C
Vapor Density	2.6
Density	0.8
Solubility	< 12.5 g/1000 mL @ 20 °C
Partition coefficient; n-octanol/water	No information available.
Autoignition Temp	390 °C / 734 °F
Decomposition Temp	No information available.
Viscosity	4.2 mPa.s @ 20 °C
Molecular Formula	C4H10O
Molecular Weight	74.12
VOC Content(%)	No information available.
Oxidizing properties	No information available.

9.2 Other safety information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

None known, based on information available.

10.2 Chemical stability

Stable under normal conditions. May form explosive peroxides on prolonged storage.

10.3 Possibility of hazardous reactions

None under normal processing.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Incompatible products.
Exposure to light. Exposure to air.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

None under normal use conditions.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
sec-Butyl alcohol	2200 mg/kg (rat)	> 2 g/kg (rat)	49 mg/L (rat)

Skin corrosion/irritation

Irritating to respiratory system.

Serious eye damage/eye irritation

Irritating to eyes.

Respiratory or skin sensitization

No information available.

Germ cell mutagenicity

No information available.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
sec-Butyl alcohol	78-92-2	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure

Respiratory system and Central nervous system (CNS).

Specific target organ toxicity - repeated exposure

None known.

Reproductive toxicity

No information available.

Chronic effects

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

11.2 Additional Information

The toxicological properties have not been fully investigated.

SECTION 12: Ecological information

12.1 Toxicity

Product		Species	Test Results	
sec-Butyl alcohol	LC50	pimephales promelas	3670 mg/L	96 h
	EC50	water flea	3750 mg/L	24 h

12.2 Persistence and degradability

Soluble in water. Persistence is unlikely based on information available.

12.3 Bio accumulative potential

No information available.

12.4 Mobility in soil

Will likely be mobile in the environment due to its water solubility.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

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 to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

UN-no	UN1120
Proper Shipping Name	Butanols
Hazard Class	3
Packing Group	III

IMDG

UN-no	UN1120
Proper Shipping Name	Butanols
Hazard Class	3
Packing Group	III

IATA

UN-no	UN1120
Proper Shipping Name	Butanols
Hazard Class	3
Packing Group	III

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

See section 2 for more information.

SARA 313 (TRI reporting)

Regulated. sec-Butyl Alcohol (78-92-2). Weight: > 95%;
Threshold values: 1.0%.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed.

US state regulations

US. Massachusetts RTK - Substance List

Listed.

US. New Jersey Worker and Community Right-to-Know Act

Listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Listed.

California Proposition 65

Not listed.

SECTION 16: Other information

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SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.