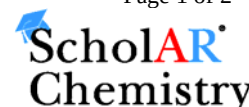


sec-Butyl Alcohol

MSDS # 617.00

Section 1: Product and Company Identification**Sec-Butyl Alcohol****Synonyms/General Names:** 2-Butanol.**Product Use:** For educational use only**Manufacturer:** Columbus Chemical Industries, Inc., Columbus, WI 53925.**24 Hour Emergency Information Telephone Numbers****CHEMTREC (USA): 800-424-9300****CANUTEC (Canada): 613-424-6666**

Scholar Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification*Clear, colorless liquid, alcohol odor.*

WARNING! Flammable liquid and body tissue irritant.
Flammable liquid, keep away from all ignition sources.
Target organs: Liver, Kidneys, Central Nervous System.

HMIS (0 to 4)

Health	1
Fire Hazard	3
Reactivity	0

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 3: Composition / Information on Ingredients

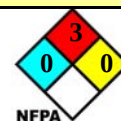
sec-Butyl alcohol (78-92-2), >99%.

Section 4: First Aid Measures*Always seek professional medical attention after first aid measures are provided.***Eyes:** Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.**Skin:** Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.**Ingestion:** Call Poison Control immediately. **Aspiration hazard.** Rinse mouth with cold water. Give victim 1-2 tbsps of activated charcoal mixed with 8 oz water.**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration.**Section 5: Fire Fighting Measures**

Class IC Flammable Liquid. When heated to decomposition, emits acrid fumes

Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire.

Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact. Material is sensitive to static discharge.

**Section 6: Accidental Release Measures**

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Remove all ignition sources and ventilate area. Contain spill with sand or absorbent material and place material in a sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage**Red****Handling:** Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.**Storage:** Store in Flammable Area [Red Storage] with other flammable materials and away from any strong oxidizers. Store in a dedicated flammables cabinet. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.**Section 8: Exposure Controls / Personal Protection**Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with an acid/organic cartridge. Exposure guidelines: sec-Butyl Alcohol: OSHA PEL: 450 mg/m³, ACGIH TLV: 300 mg/m³, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	CH ₃ CH ₂ -CHOHCH ₃	Appearance	Clear, colorless liquid.
Molecular weight	74.12.	Odor	Alcohol .
Specific Gravity	0.8 g/mL @ 20°C.	Odor Threshold	N/A.
Vapor Density (air=1)	2.6.	Solubility	Soluble alcohol, ether.
Melting Point	-114°C.	Evaporation rate	N/A. (Butyl acetate = 1).
Boiling Point/Range	94°C.	Partition Coefficient	N/A. (log P _{OW}).
Vapor Pressure (20°C)	114.4 mm Hg.	pH	N/A.
Flash Point:	24°C (75°F) cc.	LEL	1.7%.
Autoignition Temp.:	405°C (761°F).	UEL	9.8%.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and ignition sources.

Stability: Stable under normal conditions of use.

Incompatibility: Oxidizing materials, reducing agents.

Shelf life: Poor shelf life, store in a cool, dry environment.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: **Eyes:** Stinging pain, watering of eyes, inflammation of eyelids and conjunctivitis. **Skin:** Insensitivity to pain, feel of coolness or cold, skin looks white and feels hard and cold. **Ingestion:** Breath has sweet, organic odor, mental confusion, drowsiness, nausea, vomiting and headache. **Inhalation:** Rapid irregular breathing, headache, fatigue, mental confusion, nausea and vomiting, giddiness and poor judgment, convulsions and death.

Chronic Effects: Repeated/prolonged skin contact may cause dryness or rashes.

Sensitization: none expected

Sec-Butyl Alcohol: LD50 [oral, rat]; 6480 mg/kg; LC50 [rat]; 16,000 mg/l (4 hours); LD50 Dermal [rabbit]; 500 mg/24H/Mild Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not been determined

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Butanols.	Canada TDG:	Butanols.
DOT Hazard Class:	3, pg III.	Hazard Class:	3, pg III .
Identification Number:	UN1120.	UN Number:	UN1120.

Section 15: Regulatory Information

EINECS: Not listed.

TSCA: All components are listed or are exempt.

WHMIS Canada: B2, D2B: Flammable liquid, toxic material.

California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009

Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.