

Safety Data Sheet

Butyl Alcohol, (n-) (1-Butanol), ACS

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Butyl Alcohol, (n-) (1-Butanol), ACS

Synonyms/Generic Names: Trimethylcarbinol; 2-Methyl-2-propanol; tert-Butyl alcohol

Product Number: 0925

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Call: 920-623-2140 (Monday-Friday 8:00-4:30)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Flammable liquid, Target organ effect, Irritant

Target Organs: Central nervous system, Kidney, Liver, Bladder, Thyroid

Signal Word: Danger

Pictograms:



GHS Classification:

Flammable liquids	Category 3
Acute toxicity, Oral	Category 4
Skin irritation	Category 2
Eye damage	Category 1
Specific target organ toxicity-single exposure	Category 3

GHS Label Elements, including precautionary statements:

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.

Precautionary Statements:

P210	Keep away from heat/sparks/open flames/hot surfaces. 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 thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
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/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use appropriate media to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local regulations.

Potential Health Effects

Eyes	Causes eye irritation.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Ingestion	May be harmful if swallowed.

NFPA Ratings

Health	1
Flammability	3
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	1
Fire	3
Reactivity	0
Personal	H

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
n-Butyl Alcohol	>99	71-36-3	200-751-6	C ₄ H ₁₀ O	74.12 g/mol

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 15 minutes and seek medical attention.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin	Flush with plenty of water for at least 15 minutes and wash using soap. Get medical attention.
Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is flammable. Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Use appropriate media for adjacent fire. Cool unopened containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (carbon oxides) under fire conditions. (See also Stability and Reactivity section).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge.

Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls: Ventilation and appropriate grounding of containers.

Component	Exposure Limits	Basis	Entity
n-Butyl Alcohol	100 ppm 303 mg/m ³	TLV	ACGIH
	100 ppm 300 mg/m ³	PEL	OSHA
	100 ppm 300 mg/m ³	REL	NIOSH
	150 ppm 450 mg/m ³	STEL	NIOSH

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

Personal Protection

Eyes	Wear chemical safety glasses or goggles with face shield.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear nitrile or rubber gloves, and apron or lab coat. 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.
Other	Not Available

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Clear, colorless liquid
Odor	Camphor-like odor
Odor threshold	219 ppm
pH	Not Available
Melting point/freezing point	25.7°C (78.3°F)
Initial boiling point and boiling range	82.41°C (180.3°F)
Flash point	Closed Cup: 11.1°C (52°F) Open Cup: 16.2°C (61.2°F)
Evaporation rate	1.05 (Butyl acetate = 1)
Flammability (solid, gas)	Flammable liquid
Upper/lower flammability or explosive limit	Lower: 2.4% Upper: 8%
Vapor pressure	41 hPa (31 mmHg) at 20°C (68°F) 59 hPa (44 mmHg) at 26°C (79°F)
Vapor density	2.56 (Air = 1.0)
Density	0.775 g/mL at 25°C (77°F)
Solubility (ies)	Soluble in cold water, hot water. Miscible in esters, aliphatic and aromatic hydrocarbons, alcohol, and ether.
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	477.78°C (892°F)
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Vapors may form explosive mixture with air.
Conditions to Avoid	Heat, flames and sparks. Extremes of temperature and direct sunlight.
Incompatible Materials	Strong oxidizing agents, copper, alkali metals, aluminum.
Hazardous Decomposition Products	Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

n-Butyl Alcohol

Skin	LD50 Dermal - Rabbit - 3,400 mg/kg
Eyes	Eyes - Rabbit Result: Blindness
Respiratory	LC50 Inhalation - Rat - 4 h - 8000 ppm
Ingestion	LD50 Oral - rat - 790 mg/kg

Carcinogenicity

IARC	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	A4: Not classifiable for human or animal (tert-Butyl Alcohol).
NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Irritation, redness, dryness, cracking of skin.
Eyes	Burning sensation, redness, watering eyes.
Respiratory	Irritation, coughing.
Ingestion	Irritation, nausea, vomiting, diarrhea.

Chronic Toxicity	Not Available
Teratogenicity	Not Available
Mutagenicity	Mutagenic for bacteria or yeast.
Embryotoxicity	Not Available
Specific Target Organ Toxicity	May cause respiratory irritation
Reproductive Toxicity	Not Available
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

n-Butyl Alcohol

Aquatic Vertebrate	LC50 - Pimephales promelas (fathead minnow) - 1,840 mg/l - 96 h
Aquatic Invertebrate	EC50 - Daphnia magna (Water flea) - 1,983 mg/l - 48 h
Terrestrial	Not Available

Persistence and Degradability	Zahn-Wellens Test Result: > 99.9 % - Readily biodegradable
Bioaccumulative Potential	Oncorhynchus mykiss (rainbow trout) - 24 h - 921 mg/l Bioconcentration factor (BCF): 0.38
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Product or Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residue.
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Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.
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The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	UN1120, Butanols, 3, pg III
TDG	UN1120, BUTANOLS, 3, PG III
IMDG	UN1120, BUTANOLS, 3, PG III
Marine Pollutant	No
IATA/ICAO	UN1120, Butanols, 3, pg III

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Fire Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 312	Fire Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 313	Listed: n-Butanol
WHMIS Canada	Class B-2: Flammable and combustible liquid- Flammable liquid Class D-2B: Poisonous and infectious material- Other effects- Toxic

16. OTHER INFORMATION

Revision	Date
Revision 1	01/07/2013
Revision 2	08/08/2013
Revision 3	02/18/2015

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