

Material Safety Data Sheet

tert-Butanol, 99.5%

ACC# 95670

Section 1 - Chemical Product and Company Identification

MSDS Name: tert-Butanol, 99.5%

Catalog Numbers: AC107710000, AC107710010, AC107710025, NC9164479, NC9994579, XXAC10771-40KG, XXAC10771-80KG

Synonyms: Tert-Butyl Hydroxide; 1,1-Dimethylethanol; 2-Methyl-2-Propanol; Trimethylcarbinol.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
75-65-0	tert-Butyl alcohol	99.5	200-889-7

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: after melting, clear colorless liquid. Flash Point: 11 deg C. **Warning! Flammable liquid and vapor.** May cause central nervous system depression. May be absorbed through intact skin. Causes eye, skin, and respiratory tract irritation.

Target Organs: Kidneys, central nervous system, liver, respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation. May cause chemical conjunctivitis and corneal damage.

Skin: Causes skin irritation. May be absorbed through the skin in harmful amounts. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. May cause cyanosis of the extremities.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver and kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Heavy exposure may cause irritation of the eyes, nose and throat; head ache; nausea; fatigue; and dizziness.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause liver and kidney damage. May cause lung damage. Aspiration may lead to pulmonary edema. Vapors may cause dizziness or suffocation. May cause blood changes. May cause burning sensation in the chest.

Chronic: Repeated eye exposure may cause visual abnormalities including blurred vision and photosensitivity.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid. Do NOT allow victim to rub eyes or keep eyes closed.

Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. Containers may explode in the heat of a fire. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

Flash Point: 11 deg C (51.80 deg F)

Autoignition Temperature: 470 deg C (878.00 deg F)

Explosion Limits, Lower:2.40 vol %

Upper: 8.00 vol %

NFPA Rating: (estimated) Health: 1; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Use a spark-proof tool. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep away from heat, sparks and flame. Do not get on skin or in eyes. Do not ingest or inhale. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
tert-Butyl alcohol	100 ppm TWA	100 ppm TWA; 300 mg/m ³ TWA 1600 ppm IDLH	100 ppm TWA; 300 mg/m ³ TWA

OSHA Vacated PELs: tert-Butyl alcohol: 100 ppm TWA; 300 mg/m³ TWA

Personal Protective Equipment

Eyes: 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: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: after melting, clear colorless

Odor: camphor

pH: Not available.

Vapor Pressure: 36 mbar @ 20 C

Vapor Density: 2.6

Evaporation Rate:1.05 (Butyl Acetate=1)

Viscosity: 3.35 mPas 30 deg C

Boiling Point: 83 deg C @ 760mm Hg

Freezing/Melting Point:25 - 25.5 deg C

Decomposition Temperature:Not available.

Solubility: Soluble.

Specific Gravity/Density:.7860g/cm³

Molecular Formula:C₄H₁₀O

Molecular Weight:74.12

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: High temperatures, incompatible materials, ignition sources, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 75-65-0: EO1925000

LD50/LC50:

CAS# 75-65-0:

Dermal, guinea pig: LD50 = >10 mL/kg;

Draize test, rabbit, eye: 100 uL/24H Severe;

Draize test, rabbit, skin: 500 uL/24H Mild;
Inhalation, rat: LC50 = >10000 ppm/4H;
Oral, rabbit: LD50 = 3559 mg/kg;
Oral, rabbit: LD50 = 3600 mg/kg;
Oral, rat: LD50 = 2743 mg/kg;
Oral, rat: LD50 = 3500 mg/kg;
Skin, rabbit: LD50 = >2 gm/kg;

Carcinogenicity:

CAS# 75-65-0: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: No information found.

Teratogenicity: No information found.

Reproductive Effects: No information found.

Neurotoxicity: No information found.

Mutagenicity: No information found.

Other Studies: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	BUTANOLS				BUTANOLS
Hazard Class:	3				3
UN Number:	UN1120				UN1120
Packing Group:	II				III
Additional Info:					FLASHPOINT 11 C

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 75-65-0 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 75-65-0: acute, flammable.

Section 313

This material contains tert-Butyl alcohol (CAS# 75-65-0, 99.5%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 75-65-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts. California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN F

Risk Phrases:R 11 Highly flammable.
R 20 Harmful by inhalation.**Safety Phrases:**S 16 Keep away from sources of ignition - No smoking.
S 9 Keep container in a well-ventilated place.**WGK (Water Danger/Protection)**

CAS# 75-65-0: No information available.

Canada - DSL/NDSL

CAS# 75-65-0 is listed on Canada's DSL List.

Canada - WHMIS

This product does not have a WHMIS classification.

Canadian Ingredient Disclosure List

CAS# 75-65-0 is listed on the Canadian Ingredient Disclosure List.

Exposure LimitsCAS# 75-65-0: OEL-AUSTRALIA:TWA 100 ppm (300 mg/m³);STEL 150 ppm (450 mg/m³) OEL-AUSTRIA:TWA 100 ppm (300 mg/m³) OEL-BELGIUM:TWA 100 ppm (303 mg/m³);STEL 150 ppm (455 mg/m³) OEL-DENMARK:TWA 50 ppm (150 mg/m³);Skin OEL-FRANCE:TWA 100 ppm (300 mg/m³) OEL-GERMANY:TWA 100 ppm (300 mg/m³) OEL-THE NETHERLANDS:TWA 100 ppm (300 mg/m³) OEL-THE PHILIPPINES:TWA 100 ppm (300 mg/m³) OEL-SWEDEN:TWA 50 ppm (150 mg/m³);STEL 75 ppm (25 mg/m³);Skin OEL-SWITZERLAND:TWA 100 ppm (300 mg/m³);STEL 200 ppm (600 mg/m³) OEL-TURKEY:TWA 100 ppm (300 mg/m³) OEL-UNITED KINGDOM:TWA 100 ppm (300 mg/m³);STEL 150 ppm OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV**Section 16 - Additional Information****MSDS Creation Date:** 9/02/1997**Revision #5 Date:** 3/18/2003

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