Material Safety Data Sheet
tert-Butanol

ACC# 22630

Section 1 - Chemical Product and Company Identification

MSDS Name: tert-Butanol
Catalog Numbers: AC107710000, AC107710010, AC107710025, AC107710200, AC9524861, S79933, S79933-1, S799331, A401-1, A401-500, NC9164479, NC9244685, NC9871041, NC9994579, XXA401ETLI, XXAC10771-100K, XXAC10771-40KG, XXAC10771-80KG
Synonyms: tert-Butyl hydroxide; 1,1-Dimethylethanol; 2-Methyl-2-propanol; Trimethylcarbinol; tert-Butyl alcohol.
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	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. Breathing vapors may cause drowsiness and dizziness. Causes eye, skin, and respiratory tract irritation. May cause central nervous system depression.
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: Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. May be absorbed through intact skin.
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.
Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. High vapor concentrations may cause drowsiness. May cause liver and kidney damage. Exposure to high concentrations may produce narcosis, nausea and loss of consciousness.

Chronic: Prolonged or repeated skin contact may cause dermatitis. Repeated eye exposure may cause visual abnormalities including blurred vision and photosensitivity. Prolonged or repeated exposure may cause liver or kidney damage.

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. 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. Flammable liquid and vapor. May accumulate static electrical charges, and may cause ignition of its own vapors. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors 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. 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: 2; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. 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. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Approach spill from upwind.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Avoid breathing vapor or mist.
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/m3 TWA 1600 ppm IDLH	100 ppm TWA; 300 mg/m3 TWA

OSHA Vacated PELs: tert-Butyl alcohol: 100 ppm TWA; 300 mg/m3 TWA
Personal Protective Equipment
Eyes: Wear chemical goggles.
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: 42 mm Hg @ 25 deg C
Vapor Density: 2.6 (air=1)
Evaporation Rate:1.05 (Butyl Acetate=1)
Viscosity: 3.35 mPas 30 deg C
Boiling Point: 83 deg C @ 760 mm 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, ignition sources.
Incompatibilities with Other Materials: Strong oxidizing agents, strong acids, strong bases, isocyanates, aliphatic amines.
Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Will not occur.

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, NTP, or CA Prop 65.

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	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.
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%),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 depletors.
This material does not contain any Class 2 Ozone depletors.
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 Prop 65

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 36 Irritating to eyes.
R 20 Harmful by inhalation.

Safety Phrases:
S 16 Keep away from sources of ignition - No smoking.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
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 has a WHMIS classification of B2, D2B.
Canadian Ingredient Disclosure List
CAS# 75-65-0 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 12/12/1997
Revision #9 Date: 12/28/2004

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.