

Material Safety Data Sheet

tert-Butanol

ACC# 22630

Section 1 - Chemical Product and Company Identification

MSDS Name: tert-Butanol**Catalog Numbers:** AC107710000, AC107710010, AC107710025, AC107710100, AC107710200, AC390690000, AC390690010, A401-1, A401-500**Synonyms:** tert-Butyl alcohol; 2-Methyl-2-propanol.**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 low melting solid. Flash Point: 11 deg C.

Danger! Flammable liquid and vapor. Harmful if inhaled. Lachrymator (substance which increases the flow of tears). Causes eye and skin irritation. May cause respiratory tract irritation. May cause central nervous system effects. May cause dermatitis.

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

Potential Health Effects

Eye: Causes eye irritation. Lachrymator (substance which increases the flow of tears).

Skin: Causes skin irritation. May cause dermatitis. May be harmful if absorbed through the skin.

Ingestion: May cause irritation of the digestive tract. May be harmful if swallowed.

Inhalation: Harmful if inhaled. May cause respiratory tract irritation. May cause central nervous system effects.

Chronic: May cause liver and kidney damage. Adverse reproductive effects have been reported in animals. Animal studies have reported the development of tumors.

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.

Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Do not induce vomiting. Get medical aid.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

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. Containers may explode in the heat of a fire. Flammable liquid and vapor.

Extinguishing Media: Use water spray to cool fire-exposed containers. Water may be ineffective. Use water fog, dry chemical, carbon dioxide, or regular foam.

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. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Remove all sources of ignition. Use a spark-proof tool. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Take precautionary measures against static discharges. Keep away from heat, sparks and flame. Do not ingest or inhale. Use only in a chemical fume hood.

Storage: Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

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. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Low melting solid

Appearance: after melting, clear colorless

Odor: camphor

pH: 7

Vapor Pressure: 36 mbar @ 20 deg C

Vapor Density: 2.6 (air=1)

Evaporation Rate: 1.05 (Butyl Acetate=1)

Viscosity: 3.35 mPa @ 30 deg C

Boiling Point: 83 deg C @ 760 mmHg

Freezing/Melting Point: 25 - 25.5 deg C

Decomposition Temperature: Not available.

Solubility: Soluble.

Specific Gravity/Density: 0.780

Molecular Formula: C₄H₁₀O

Molecular Weight: 74.12

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, ignition sources, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents, acid chlorides, acid anhydrides, acids.

Hazardous Decomposition Products: Carbon monoxide, carbon monoxide, 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: Tumorigenic effects have been reported in experimental animals.**Teratogenicity:** Teratogenic effects have occurred in experimental animals.**Reproductive Effects:** Adverse reproductive effects have occurred in experimental animals.**Mutagenicity:** Mutation in microorganisms: See actual entry in RTECS for complete information.**Neurotoxicity:** No information found**Other Studies:**

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.**Environmental:** No information available.**Physical:** No information available.**Other:** Do not empty into drains.

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
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Shipping Name:	BUTANOLS	BUTANOLS
Hazard Class:	3	3
UN Number:	UN1120	UN1120
Packing Group:	II	II

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: immediate, fire.

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.

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

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 #12 Date: 7/23/2008

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.