

SAFETY DATA SHEET

Preparation Date: No data available

Revision Date: 03/30/2015

Revision Number: G1

Product identifier

Product code: B1188
Product Name: TERT-BUTYL ALCOHOL, REAGENT

Other means of identification

Synonyms:
1,1-Dimethylethanol
2-Methyl-2-propanol
2-Methylpropan-2-ol
2-Propanol, 2-methyl-
Alcool butylique tertiaire (French)
Arconol
Butanol tertiaire (French)
Butyl alcohol
Methanol, trimethyl-
NCI-C55367
Tertiary-Butyl alcohol
Trimethyl methanol
Trimethylcarbinol
t-Butanol
t-Butyl alcohol
t-Butyl hydroxide
tert-Butanol
tert-Butyl alcohol (OSHA)
CAS #: 75-65-0
RTECS # EO1925000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Solvent.
Uses advised against: No information available

Supplier: Spectrum Chemicals and Laboratory Products, Inc.
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Flammable liquids	Category 2

Label elements

Danger

Hazard statements

Causes serious eye irritation
May cause respiratory irritation. May cause drowsiness or dizziness
Highly flammable liquid and vapor



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

May be harmful in contact with skin
Can burn with an invisible flame

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/./? /equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Wear protective gloves/protective clothing/eye protection/face protection
Keep cool

In case of fire: Use CO2, dry chemical, or foam to extinguish.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed
Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
tert-Butyl Alcohol 75-65-0	75-65-0	100	*

4. FIRST AID MEASURES**First aid measures****General Advice:**

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact:

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact:

Flush eye with water for 15 minutes. Get medical attention.

Inhalation:

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

Ingestion:

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed**Symptoms**

Severe skin irritation. Causes serious eye irritation. May cause irritation of respiratory tract.

Indication of any immediate medical attention and special treatment needed**Notes to Physician:**

Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES**Extinguishing Media****Suitable Extinguishing Media:**Carbon dioxide (CO₂). Dry chemical. Alcohol-resistant foam. Water spray.**Unsuitable Extinguishing Media:**

Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical**Hazardous Combustion Products:**

Carbon monoxide; Carbon dioxide

Specific hazards:

Flammable
May be ignited by heat, sparks or flames
Material can burn with invisible flame
Vapor may travel considerable distance to source of ignition and flash back
Vapors may form explosive mixtures with air
Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks)
Container explosion may occur under fire conditions or when heated
Fire may produce irritating, corrosive and/or toxic gases

Special Protective Actions for Firefighters**Specific Methods:**

Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

Special Protective Equipment for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures****Personal Precautions:**

Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

Environmental precautions

Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up**Methods for containment**

Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. Dike far ahead of spill; use dry sand to contain the flow of material.

Methods for cleaning up

Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE**Precautions for safe handling****Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

Safe Handling Advice:

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Store in a segregated and approved area. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents. Acids. Potassium sodium alloys.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
tert-Butyl Alcohol - 75-65-0	100 ppm TWA 300 mg/m ³ TWA	100 ppm TWA 300 mg/m ³ TWA 150 ppm STEL 450 mg/m ³ STEL	100 ppm TWA	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
tert-Butyl Alcohol - 75-65-0	100 ppm TWA 303 mg/m ³ TWA	100 ppm TWA	100 ppm TWA	100 ppm TWAEV 303 mg/m ³ TWAEV

Australia and Mexico

Components	Australia	Mexico
tert-Butyl Alcohol 75-65-0	150 ppm STEL 455 mg/m ³ STEL 100 ppm TWA 303 mg/m ³ TWA	100 ppm TWA 300 mg/m ³ TWA 150 ppm STEL 450 mg/m ³ STEL

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Goggles. Safety glasses with side-shields.
- Skin and body protection:** Chemical resistant apron. Long sleeved clothing. Gloves.
- Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical state: Low melting point solid. Liquid.	Appearance: Solid below freezing point; Liquid above freezing point.	Color: Clear colorless liquid after melting.
Odor: Camphor-like.	Taste No information available	Molecular/Formula weight: 74.12
Formula: C4-H10-O	Flash point (°C): 11	Flashpoint (°C/°F): 11 °C/52 °F
Flash Point Tested according to: Closed cup	Lower Explosion Limit (%): 2.4%	Upper Explosion Limit (%): 8.0%
Autoignition Temperature (°C/°F): 477.78 °C/892 °F	pH: No information available	Melting point/range(°C/°F): 25.3-25.7 °C/77.54-78.26 °F
Boiling point/range(°C/°F): 81.9-82..8 °C/179.42-181.04 °F	Decomposition temperature(°C/°F): No information available	Bulk density: No information available
Specific gravity: 0.78581 @ 20 °C	Vapor pressure @ 20°C (kPa): 4.07	Density (g/cm3): 0.7887 @ 20 °C
Evaporation rate: No information available	Vapor density: 2.55	VOC content (g/L): 785-788
Odor threshold (ppm): 219	Partition coefficient (n-octanol/water): 0.35	Viscosity: No information available
Miscibility: Miscible with water	Solubility: Very soluble in water Solubility in Water: 1000 g/l @ 25 °C	

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents
Reactive with acids
It ignites on contact with potassium sodium alloys

Chemical stability

Stability: Stable under recommended storage conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials.

Incompatible Materials: Oxidizing agents. Acids. Potassium sodium alloys.

Hazardous decomposition products: Carbon monoxide. Carbon dioxide.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

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Information on likely routes of exposure

Principal Routes of Exposure:

Ingestion. Skin. Eyes. Inhalation.

Acute Toxicity

Component Information

tert-Butyl Alcohol - 75-65-0

LD50/oral/rat = 2733 mg/kg Oral LD50 Rat

LD50/oral/mouse = No information available

LD50/dermal/rat = No information available

LD50/dermal/rabbit = 2 g/kg Dermal LD50Rabbit

LC50/inhalation/rat = >10000 ppm Inhalation LC50 Rat 4 h

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = 3558 mg/kg Oral LD50 Rabbit

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = 2733 mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = No information available

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = >2000mg/kg

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = No information available

VALUE-Gas = >10000ppm

VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: May cause skin irritation. It may be absorbed through the skin.

Eye Contact: Causes serious eye irritation.

Inhalation Irritating to respiratory system. Inhalation of high concentrations of vapors may cause dizziness or suffocation. May cause headache. It may affect behavior/central nervous system (convulsions). May affect behavior/central nervous system (drowsiness, fatigue, confusion, delirium). May affect behavior/central nervous system (narcosis). Can cause dyspnea (shortness of breath and difficulty breathing). May affect respiration.

Ingestion

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause loss of appetite. May affect the cardiovascular system (change in heart rate). May affect respiration (difficult or labored breathing resulting in shortness of breath). May cause headache. May affect behavior/central nervous system (dizziness, drowsiness). May affect behavior/central nervous system (weakness, ataxia, somnolence, convulsions). May affect liver. May affect peripheral nervous system (peripheral nerve and sensation - spastic paralysis with or without sensory change). May affect behavior/central nervous system (general anesthetic).

Aspiration hazard

No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Chronic Toxicity**

Prolonged or repeated skin contact may cause dermatitis and defatting, dryness, and cracking of the skin. Prolonged or repeated ingestion may affect the liver, and kidneys. Prolonged or repeated inhalation and/or ingestion may cause central nervous system effects (affect behavior). Prolonged or repeated inhalation may affect the kidneys. Prolonged or repeated inhalation may affect the liver. Prolonged or repeated inhalation may cause bronchitis with coughing, phlegm, and/or shortness of breath.

Sensitization:

No information available

Mutagenic Effects:

May affect genetic material
Mutations in microorganisms
Experiments with bacteria and/or yeast have shown mutagenic effects

Carcinogenic effects:

Not considered carcinogenic

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
tert-Butyl Alcohol	A4 Not Classifiable as a Human Carcinogen	Not listed	Not listed	Not listed	Not listed	Not listed

Reproductive toxicity

No data is available

Reproductive Effects:
Developmental Effects:
Teratogenic Effects:

No information available
No information available
May cause birth defects (teratogenic effects) based on animal test data

Specific Target Organ Toxicity

STOT - single exposure
STOT - repeated exposure
Target Organs:

No information available
No information available
Central nervous system. Respiratory system. Liver. Kidneys.

12. ECOLOGICAL INFORMATION

Ecotoxicity**Ecotoxicity effects:**

Aquatic environment.

tert-Butyl Alcohol - 75-65-0

Freshwater Algae Data: 1000 mg/L EC50 Desmodesmus subspicatus 72 h
Freshwater Fish Species Data: 6130 - 6700 mg/L LC50 Pimephales promelas 96 h flow-through 1
Water Flea Data: 4607 - 6577 mg/L EC50 Daphnia magna 48 h
933 mg/L EC50 Daphnia magna 48 h

Persistence and degradability: 2.5% (by BOD), 13.0% (by TOC), 10.5% (by GC)

Bioaccumulative potential: < 0.5 (conc. 6 ppm), <5 (conc. 0.6 ppm).

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
tert-Butyl Alcohol	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN1120
Proper Shipping Name: Butanols
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
ERG No: 129
Marine Pollutant: No data available
DOT RQ (lbs): No information available
Symbol(s): R5

TDG (Canada)

UN-No: UN1120
Proper Shipping Name: Butanols
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

ADR

UN-No: UN1120
Proper Shipping Name: Butanols
Hazard Class: 3
Packing Group: II
Subsidiary Risk: No information available

14. TRANSPORT INFORMATION

Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN1120
Proper Shipping Name: Butanols
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-E
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN1120
Proper Shipping Name: Butanols
Hazard Class: 3
Subsidiary Risk: 3
Packing Group: II
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN1120
Proper Shipping Name: Butanols
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

IATA

UN-No: UN1120
Proper Shipping Name: Butanols
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
ERG Code: 3L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>tert-Butyl Alcohol</i>	Present	Present KE-24895	Present	Present (2)-3049	Present	Present	Present 200-889-7

U.S. Regulations

tert-Butyl Alcohol
 Massachusetts RTK: Present

tert-Butyl Alcohol

New Jersey RTK Hazardous Substance List: 1787
New Jersey (EHS) List: 1787 500 lb TPQ
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
Pennsylvania RTK - Environmental Hazard List Present
Minnesota - Hazardous Substance List: Present
California Directors List of Hazardous Substances: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>tert-Butyl Alcohol</i>	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
<i>tert-Butyl Alcohol</i>	None	None	None	None	1.0 % de minimis concentration

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>tert-Butyl Alcohol</i>	Not Applicable	01/26/199406/30/1998

Canada

WHMIS hazard class:

B2 Flammable liquid
D2B Toxic materials

tert-Butyl Alcohol

B2 D2B

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
<i>tert-Butyl Alcohol</i>	1 %

Inventory

Components	Canada (DSL)	Canada (NDSL)
<i>tert-Butyl Alcohol</i>	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting

tert-Butyl Alcohol	Not listed	Not listed
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EU Classification

R-phrase(s)

R11 - Highly flammable.

R20 - Harmful by inhalation.

R36/37 - Irritating to eyes and respiratory system.

S -phrase(s)

S 2 - Keep out of the reach of children.

S 9 - Keep container in a well-ventilated place.

S16 - Keep away from sources of ignition - No smoking.

S46 - If swallowed, seek medical advice immediately and show this container or label.

Components	Classification	Concentration Limits:	Safety Phrases
tert-Butyl Alcohol	F; R11 Xn; R20 Xi; R36/37	No information	S2 S9 S16 S46

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

Flammable

Xn - Harmful.

Xi - Irritant.



16. OTHER INFORMATION

16. OTHER INFORMATION

Revision Date: 03/30/2015
Prepared by: Sonia Owen

Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet