

# ACRÖS

# ORGANICS

## Material Safety Data Sheet

Creation Date 07-Sep-2010

Revision Date 12-Dec-2012

Revision Number 2

### 1. PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	<b>tert-Butanol</b>	
<b>Cat No.</b>	<b>AC447010000, AC447010010, AC447010025</b>	
<b>Synonyms</b>	tert-Butyl alcohol; 2-Methyl-2-propanol	
<b>Recommended Use</b>	Laboratory chemicals	
<b>Company</b>	<b>Entity / Business Name</b>	<b>Emergency Telephone Number</b>
Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410 Tel: (201) 796-7100	Acros Organics One Reagent Lane Fair Lawn, NJ 07410	Chemtrec US: (800) 424-9300 Chemtrec EU: 001 (202) 483-7616

### 2. HAZARDS IDENTIFICATION

#### DANGER!

#### Emergency Overview

Flammable liquid and vapor. Harmful by inhalation. Irritating to eyes, respiratory system and skin.

**Appearance** Clear

**Physical State** Liquid

**odor** strong

**Target Organs** Skin, Respiratory system, Eyes, Central nervous system (CNS), Liver, Kidney

#### Potential Health Effects

#### Acute Effects

#### Principle Routes of Exposure

**Eyes**

**Skin**

**Inhalation**

**Ingestion**

Irritating to eyes.

Irritating to skin. May be harmful in contact with skin.

Harmful by inhalation. Irritating to respiratory system.

May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Chronic Effects**

Tumorigenic effects have been reported in experimental animals.. Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse liver effects. May cause adverse kidney effects.

See Section 11 for additional Toxicological information.

**Aggravated Medical Conditions**

No information available.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Haz/Non-haz**

Component	CAS-No	Weight %
tert-Butyl alcohol	75-65-0	>95

### 4. FIRST AID MEASURES

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

**Inhalation**

Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Obtain medical attention.

**Ingestion**

Do not induce vomiting. Call a physician or Poison Control Center immediately.

**Notes to Physician**

Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

**Flash Point**

11°C / 51.8°F

**Method**

No information available.

**Autoignition Temperature**

470°C / 878°F

**Explosion Limits****Upper**

8.0 vol %

**Lower**

2.4 vol %

**Suitable Extinguishing Media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Cool closed containers exposed to fire with water spray.

**Unsuitable Extinguishing Media**

No information available.

**Hazardous Combustion Products**

No information available.

**Sensitivity to mechanical impact**

No information available.

**Sensitivity to static discharge**

No information available.

**Specific Hazards Arising from the Chemical**

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**                      **Health 2**                      **Flammability 3**                      **Instability 0**                      **Physical hazards N/A**

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions**                      Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges.

**Environmental Precautions**                      Should not be released into the environment.

**Methods for Containment and Clean Up**                      Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

## 7. HANDLING AND STORAGE

**Handling**                      Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use explosion-proof equipment. Take precautionary measures against static discharges.

**Storage**                      Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat and sources of ignition.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering Measures

Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

### Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
tert-Butyl alcohol	TWA: 100 ppm	(Vacated) TWA: 100 ppm (Vacated) TWA: 300 mg/m <sup>3</sup> (Vacated) STEL: 150 ppm (Vacated) STEL: 450 mg/m <sup>3</sup> TWA: 100 ppm TWA: 300 mg/m <sup>3</sup>	IDLH: 1600 ppm TWA: 100 ppm TWA: 300 mg/m <sup>3</sup> STEL: 150 ppm STEL: 450 mg/m <sup>3</sup>

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
tert-Butyl alcohol	TWA: 100 ppm TWA: 303 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 300 mg/m <sup>3</sup> STEL: 150 ppm STEL: 450 mg/m <sup>3</sup>	TWA: 100 ppm STEL: 150 ppm

**NIOSH IDLH:** Immediately Dangerous to Life or Health

### Personal Protective Equipment

#### Eye/face Protection

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 and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

#### Respiratory Protection

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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Clear
odor	strong
Odor Threshold	No information available.
pH	7
Vapor Pressure	36 mbar @ 20 °C
Vapor Density	2.6 (Air = 1.0)
Viscosity	3.35 mPa s at 30 °C
Boiling Point/Range	83°C / 181.4°F@ 760 mmHg
Melting Point/Range	25 - 25.5°C / 77 - 77.9°F
Decomposition temperature	No information available.
Flash Point	11°C / 51.8°F
Evaporation Rate	No information available.
Specific Gravity	0.780
Solubility	No information available.
log Pow	No data available
Molecular Weight	74.12
Molecular Formula	C <sub>4</sub> H <sub>10</sub> O

## 10. STABILITY AND REACTIVITY

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<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.
<b>Incompatible Materials</b>	Strong oxidizing agents, Acids, Acid anhydrides, Acid chlorides
<b>Hazardous Decomposition Products</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> )
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions .</b>	None under normal processing..

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation (Dust)
tert-Butyl alcohol	2733 mg/kg ( Rat )	2000 mg/kg ( Rabbit )	9700 ppm ( Rat ) 4 h

**Irritation** Irritating to eyes, respiratory system and skin

**Toxicologically Synergistic Products** No information available.

### Chronic Toxicity

**Carcinogenicity** There are no known carcinogenic chemicals in this product

**Sensitization** No information available.

**Mutagenic Effects** No information available.

**Reproductive Effects** Experiments have shown reproductive toxicity effects on laboratory animals.

**Developmental Effects** Developmental effects have occurred in experimental animals.

**Teratogenicity** Teratogenic effects have occurred in experimental animals..

**Other Adverse Effects** Tumorigenic effects have been reported in experimental animals.. See actual entry in RTECS for complete information.

**Endocrine Disruptor Information** No information available

## 12. ECOLOGICAL INFORMATION

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### Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
tert-Butyl alcohol	EC50 1000 mg/L 72 h	LC50 >6000 mg/L/96h (Pimephales promelas)	EC50 > 10000 mg/L 17 h	EC50 933 mg/L 48 h

**Persistence and Degradability**      Readily biodegradable.

**Bioaccumulation/ Accumulation**      No information available

**Mobility**      .

Component	log Pow
tert-Butyl alcohol	0.35

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Methods**      Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. TRANSPORT INFORMATION

### DOT

**UN-No**                                      UN1120  
**Proper Shipping Name**              BUTANOLS  
**Hazard Class**                              3  
**Packing Group**                            II

### TDG

**UN-No**                                      UN1120  
**Proper Shipping Name**              BUTANOLS  
**Hazard Class**                              3  
**Packing Group**                            II

### IATA

**UN-No**                                      1120  
**Proper Shipping Name**              BUTANOLS  
**Hazard Class**                              3  
**Packing Group**                            II

### IMDG/IMO

**UN-No**                                      1120  
**Proper Shipping Name**              BUTANOLS

**14. TRANSPORT INFORMATION**

**Hazard Class** 3  
**Packing Group** II

**15. REGULATORY INFORMATION**

**International Inventories**

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
tert-Butyl alcohol	X	X	-	200-889-7	-		X	X	X	X	X

**Legend:**

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

**TSCA 12(b)** Not applicable

**SARA 313**

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
tert-Butyl alcohol	75-65-0	>95	1.0

**SARA 311/312 Hazardous Categorization**

**Acute Health Hazard** Yes  
**Chronic Health Hazard** No  
**Fire Hazard** Yes  
**Sudden Release of Pressure Hazard** No  
**Reactive Hazard** No

**Clean Water Act**

Not applicable

**Clean Air Act**

Not applicable

**OSHA**

Not applicable

**CERCLA**

Not Applicable

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**State Right-to-Know**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
tert-Butyl alcohol	X	X	X	-	X

**U.S. Department of Transportation**

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

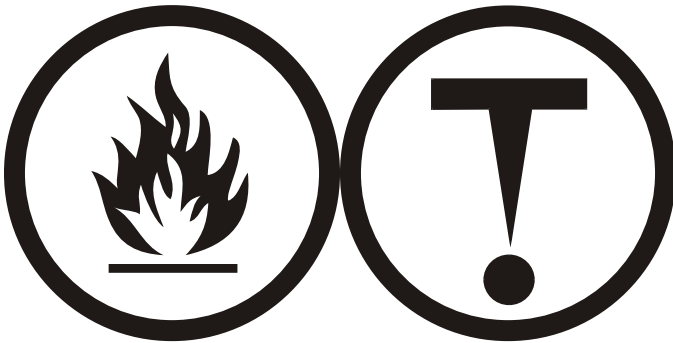
**Canada**

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

**WHMIS Hazard Class**

B2 Flammable liquid

D2B Toxic materials



16. OTHER INFORMATION

Prepared By

Regulatory Affairs



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**16. OTHER INFORMATION**

Thermo Fisher Scientific  
Email: EMSDS.RA@thermofisher.com

**Creation Date** 07-Sep-2010

**Print Date** 12-Dec-2012

**Revision Summary** "\*\*\*\*", and red text indicates revision

**Disclaimer**

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of MSDS**