

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 1 of 7

tert-Butanol

SECTION 1 : Identification of the substance/mixture and of the supplier

Product name : tert-Butanol

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: S25210A

Recommended uses of the product and uses restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331

Supplier Details:

Fisher Science Education
15 Jet View Drive, Rochester, NY 14624

Emergency telephone number:

Fisher Science Education Emergency Telephone No.: 800-535-5053

SECTION 2 : Hazards identification

Classification of the substance or mixture:



Flammable

Flammable liquids, category 2



Irritant

Eye irritation, category 2A
Specific target organ toxicity following single exposure, category 3

Flammable Liquids Cat. 2

Eye Irritation Cat. 2A

STOT SE Cat. 3

Signal word :Danger

Hazard statements:

Highly flammable liquid and vapour

Causes serious eye irritation

May cause respiratory irritation

Precautionary statements:

If medical advice is needed, have product container or label at hand

Keep out of reach of children

Read label before use

Keep away from heat/sparks/open flames/hot surfaces. No smoking

Wear protective gloves/protective clothing/eye protection/face protection

Keep container tightly closed

Ground/bond container and receiving equipment

Use explosion-proof electrical/ventilating/light/equipment

Use only non-sparking tools

Take precautionary measures against static discharge

Avoid breathing dust/fume/gas/mist/vapours/spray

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 2 of 7

tert-Butanol

Wash skin thoroughly after handling

Use only outdoors or in a well-ventilated area

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

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.

Continue rinsing

Call a POISON CENTER or doctor/physician if you feel unwell

If eye irritation persists get medical advice/attention

In case of fire: Use agents recommended in section 5 for extinction

Store in a well ventilated place. Keep container tightly closed

Store in a well ventilated place. Keep cool

Store locked up

Dispose of contents and container to an approved waste disposal plant

Other Non-GHS Classification:

WHMIS



NFPA/HMIS



NFPA SCALE (0-4)

Health	2
Flammability	3
Physical Hazard	0
Personal Protection	X

HMIS RATINGS (0-4)

SECTION 3 : Composition/information on ingredients

Ingredients:

CAS 75-65-0	Tert-Butanol	100 %
Percentages are by weight		

SECTION 4 : First aid measures

Description of first aid measures

After inhalation: Loosen clothing as necessary and position individual in a comfortable position. Move exposed to fresh air. Give artificial respiration if necessary. If breathing is difficult give oxygen. Get medical assistance if cough or other symptoms appear.

After skin contact: Rinse/flush exposed skin gently using soap and water for 15-20 minutes. Seek medical advice if discomfort or irritation persists.

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 3 of 7

tert-Butanol

After eye contact: Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek immediate medical attention.

After swallowing: Do not induce vomiting. Volatile chemicals have a high risk of being aspirated into the victim's lungs during vomiting which increases the medical problems. Rinse mouth thoroughly. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Most important symptoms and effects, both acute and delayed:

Vapor is narcotic in action and irritating to respiratory passages. Liquid is irritating to skin and eyes.;None known

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention provide SDS document to physician. Physician should treat symptomatically.

SECTION 5 : Firefighting measures

Extinguishing media

Suitable extinguishing agents: Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

For safety reasons unsuitable extinguishing agents: Water may be ineffective on fire.

Special hazards arising from the substance or mixture:

Flammable vapor is heavier than air and may accumulate in low-lying areas. Flashback along vapor trail may occur.

Advice for firefighters:

Protective equipment: Wear protective eyeware, gloves, and clothing. Refer to Section 8. Use NIOSH-approved respiratory protection/breathing apparatus.

Additional information (precautions): Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

SECTION 6 : Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Ensure that air-handling systems are operational.

Environmental precautions:

Should not be released into environment. Prevent from reaching drains, sewer, or waterway.

Methods and material for containment and cleaning up:

Wear protective eyeware, gloves, and clothing. Refer to Section 8. Always obey local regulations. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Use spill berms to contain spill and absorb spill from outside working way towards center. Place in appropriate container for disposal. For disposal, refer to Section 13.

Reference to other sections:

SECTION 7 : Handling and storage

Precautions for safe handling:

Avoid contact with skin, eyes, and clothing. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Follow proper disposal methods. Refer to Section 13. Do not eat, drink, smoke, or use personal products when handling chemical substances.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Keep away from food and beverages. Protect from freezing and physical damage. Provide ventilation for containers. Keep container tightly sealed. Store away from incompatible

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 4 of 7

tert-Butanol

materials. Store away from heat, sparks, and other sources of ignition.

SECTION 8 : Exposure controls/personal protection



Control Parameters:

75-65-0, Tert-Butanol, 100 ppm ACGIH TLV
75-65-0, Tert-Butanol, 100 ppm, 300 mg/m3 OSHA Table Z-1 Limits for Air Contaminants
75-65-0, Tert-Butanol, 150 ppm, 450 mg/m3 NIOSH Short-Term (ST)

Appropriate Engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above. Use in a Chemical Fume Hood.

Respiratory protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. When necessary use NIOSH approved breathing equipment.

Protection of skin:

Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing.

Eye protection:

Wear face shield and ANSI Z87 approved safety glasses or goggles.

General hygienic measures:

Perform routine housekeeping. Wash hands before breaks and at the end of work. Avoid contact with skin, eyes, and clothing. Before wearing wash contaminated clothing.

SECTION 9 : Physical and chemical properties

Appearance (physical state,color):	Clear, colorless liquid	Explosion limit lower: Explosion limit upper:	2.4% 8%
Odor:	Strong alcohol odor	Vapor pressure:	36 mbar @ 20C
Odor threshold:	Not Determined	Vapor density:	2.6 (Air=1)
pH-value:	7	Relative density:	0.780
Melting/Freezing point:	25-25.5C	Solubilities:	Water soluble
Boiling point/Boiling range:	83C	Partition coefficient (n-octanol/water):	Not Determined
Flash point (closed cup):	11C	Auto/Self-ignition temperature:	480C
Evaporation rate:	Not Determined	Decomposition temperature:	Not Determined

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 5 of 7

tert-Butanol

Flammability (solid,gaseous):	Not Determined	Viscosity:	a. Kinematic:Not Determined b. Dynamic: Not Determined
Density: Not Determined			

SECTION 10 : Stability and reactivity

Reactivity: Nonreactive under normal conditions.

Chemical stability: Stable under normal conditions.

Possible hazardous reactions: None under normal processing.

Conditions to avoid: Incompatible materials. Heat, hot surfaces, open flames, and sources of ignition.

Incompatible materials: Strong oxidizing agents, Acids, Acid anhydrides, Acid chlorines

Hazardous decomposition products: Oxides of carbon.

SECTION 11 : Toxicological information

Acute Toxicity:

Oral:	2,733 mg/kg	Rat
Inhalation:	9,700 ppm/4hr	Rat
Dermal:	>2,000 mg/kg	Rabbit

Chronic Toxicity: No additional information.

Corrosion Irritation:

Dermal:	Mild skin irritation - 24 hr	Rabbit
Ocular:	Irritating to eyes - 24 hr	Rabbit
Sensitization:	No additional information.	
Single Target Organ (STOT):		No additional information.
Numerical Measures:		No additional information.
Carcinogenicity:		75-65-0 Tert-Butanol: Not listed as a carcinogen (ACGIH, IARC, NTP)
Mutagenicity:		No additional information.
Reproductive Toxicity:		No additional information.

SECTION 12 : Ecological information

Ecotoxicity

Fish: LC50 - Pimephales promelas (fathead minnow) - 6,140 mg/l - 96 hr

Daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 933 mg/l - 48 hr

Persistence and degradability: Readily biodegradable.

Bioaccumulative potential: Does not bioaccumulate.

Mobility in soil: Not Determined

Other adverse effects: Not Determined

SECTION 13 : Disposal considerations

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 6 of 7

tert-Butanol

Waste disposal recommendations:

Contact a licensed professional waste disposal service to dispose of this material. Dispose of empty containers as unused product. Product or containers must not be disposed with household garbage. 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. Ensure complete and accurate classification.

SECTION 14 : Transport information

UN-Number

1120

UN proper shipping name

Butanols

Transport hazard class(es)



Class:

3 Flammable liquids

Packing group:II

Environmental hazard:No

Transport in bulk:

Special precautions for user:

SECTION 15 : Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

Acute, Fire

SARA Section 313 (Specific toxic chemical listings):

None of the ingredients is listed

RCRA (hazardous waste code):

None of the ingredients is listed

TSCA (Toxic Substances Control Act):

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

None of the ingredients is listed

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed

Chemicals known to cause developmental toxicity:

None of the ingredients is listed

Canada

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Page 7 of 7

tert-Butanol

Canadian Domestic Substances List (DSL):

All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients is listed

Canadian NPRI Ingredient Disclosure list (limit 1%):

75-65-0 Tert-Butanol

SECTION 16 : Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

GHS Full Text Phrases:

Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

PNEC: Predicted No-Effect Concentration (REACH)

CFR: Code of Federal Regulations (USA)

SARA: Superfund Amendments and Reauthorization Act (USA)

RCRA: Resource Conservation and Recovery Act (USA)

TSCA: Toxic Substances Control Act (USA)

NPRI: National Pollutant Release Inventory (Canada)

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

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