

Safety Data Sheet

According to Canadian Hazardous Products Regulations and WHMIS 2015

Initial preparation date: 08.08.2017

Page 1 of 9

tert-Butanol

SECTION 1: Identification

Product identifier

Product name: tert-Butanol

Product code: S25210

Recommended use of the product and restriction on use

Relevant identified uses: Not determined or not applicable.

Uses advised against: Not determined or not applicable.

Reasons why uses advised against: Not determined or not applicable.

Manufacturer or supplier details

Manufacturer:

AquaPhoenix Scientific
860 Gitts Run Road
Hanover
PA 17331
(717) 632-1291

Supplier:

Fisher Science Education
6771 Silver Crest Road
Nazareth
PA 18064
800 955-1177

Emergency telephone number:

United States

Emergency Telephone No.: 800-255-3924

SECTION 2: Hazard identification

GHS classification:

Flammable liquids, category 2

Acute toxicity (inhalation), category 4

Eye irritation, category 2A

Specific target organ toxicity - single exposure, category 3, respiratory irritation

Label elements

Hazard pictograms:



Signal word: Danger

Hazard statements:

H225 Highly flammable liquid and vapor

H332 Harmful if inhaled

H319 Causes serious eye irritation

H335 May cause respiratory irritation

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking

P233 Keep container tightly closed

Safety Data Sheet

According to Canadian Hazardous Products Regulations and WHMIS 2015

Initial preparation date: 08.08.2017

Page 2 of 9

tert-Butanol

P240 Ground/bond container and receiving equipment
P241 Use explosion-proof electrical/ventilating/light/equipment
P242 Use only non-sparking tools
P243 Take precautionary measures against static discharge
P280 Wear protective gloves/protective clothing/eye protection/face protection
P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P271 Use only outdoors or in a well-ventilated area
P264 Wash skin thoroughly after handling
P303+P361+P353 If on skin (or hair): Immediately remove/take off all contaminated clothing. Rinse skin with water/shower
P370+P378 In case of fire: Use agents recommended in section 5 for extinction
P304+P340+P312 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
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
P405 Store locked up
P403+P233 Store in a well ventilated place. Keep container tightly closed
P501 Dispose of contents and container as instructed in Section 13

Hazards not otherwise classified: None

SECTION 3: Composition/information on ingredients

| Identification | Name | Weight % |
|------------------------|--------------|----------|
| CAS number: 75-65-0 | tert-Butanol | 100 |

Additional Information: None

SECTION 4: First-aid measures

Description of first-aid measures

General notes:

Not determined or not available.

After inhalation:

Loosen clothing as necessary and position individual in a comfortable position
Maintain an unobstructed airway
Move to fresh air
Call a POISON CONTROL CENTER or seek medical attention if you feel unwell

After skin contact:

Rinse affected area with soap and water
If symptoms develop or persist, seek medical attention

After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes
If symptoms develop or persist, seek medical attention
Remove contact lens(es) if able to do so during rinsing
Seek medical attention if irritation persists or if concerned

After ingestion:

Rinse mouth thoroughly

Safety Data Sheet

According to Canadian Hazardous Products Regulations and WHMIS 2015

Initial preparation date: 08.08.2017

Page 3 of 9

tert-Butanol

Seek medical attention if irritation, discomfort, or vomiting persists

Most important symptoms and effects, both acute and delayed

Acute symptoms and effects:

Not determined or not available.

Delayed symptoms and effects:

Not determined or not available.

Immediate medical attention and special treatment

Specific treatment:

Not determined or not available.

Notes for the doctor:

Not determined or not available.

SECTION 5: Fire-fighting measures

Extinguishing media

Suitable extinguishing media:

Use dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam

Unsuitable extinguishing media:

Not determined or not applicable.

Specific hazards during fire-fighting:

Thermal decomposition can lead to release of irritating gases and vapors

Vapors can flow to distant ignition sources and flashback

Liquid is volatile and may generate an explosive atmosphere

Special protective equipment for firefighters:

Wear protective eye wear, gloves and clothing

Refer to Section 8

Special 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 air handling systems are operational

Beware of vapors accumulating to form explosive concentrations

Vapors can accumulate in low areas

Environmental precautions:

Should not be released into the environment

Prevent from reaching drains, sewer or waterway

Methods and material for containment and cleaning up:

Wear protective eye wear, gloves and clothing

Use spark-proof tools and explosion-proof equipment

Reference to other sections:

Not determined or not applicable.

Safety Data Sheet

According to Canadian Hazardous Products Regulations and WHMIS 2015

Initial preparation date: 08.08.2017

Page 4 of 9

tert-Butanol

SECTION 7: Handling and storage

Precautions for safe handling:

- Do not eat, drink, smoke or use personal products when handling chemical substances.
- Avoid breathing mist or vapor.
- Use only non-sparking tools.
- Take precautionary measures against electrostatic discharges.

Conditions for safe storage, including any incompatibilities:

- Store in a cool, well-ventilated area.
- Keep container tightly sealed.
- Keep away from all ignition sources: open flames, hot surfaces, direct sunlight, spark sources.
- Store locked up.
- Use appropriate containment to avoid environmental contamination.
- Protect from freezing and physical damage.

SECTION 8: Exposure controls/personal protection

Only those substances with limit values have been included below.

Occupational Exposure limit values:

| Country (Legal Basis) | Substance | Identifier | Permissible concentration |
|-----------------------|--------------|------------|------------------------------------------|
| Canada | tert-Butanol | 75-65-0 | 8 hr Time Weighted Avg (TWA): 100 ppm |

Biological limit values:

No biological exposure limits noted for the ingredient(s).

Information on monitoring procedures:

Not determined or not applicable.

Appropriate engineering controls:

- Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling.
- Use explosion-proof ventilation equipment.

Personal protection equipment

Eye and face protection:

Safety goggles or glasses, or appropriate eye protection.

Skin and body protection:

Select glove material impermeable and resistant to the substance.

Respiratory protection:

When necessary, use NIOSH-approved breathing equipment.

General hygienic measures:

- Wash hands before breaks and at the end of work.
- Avoid contact with skin, eyes and clothing.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Safety Data Sheet

According to Canadian Hazardous Products Regulations and WHMIS 2015

Initial preparation date: 08.08.2017

Page 5 of 9

tert-Butanol

| | |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Appearance (physical state, color): | Clear, colorless liquid/solid (Note: This product can be either solid or liquid at room temperature) |
| Odor: | Strong alcohol odor |
| Odor threshold: | Not determined. |
| pH-value: | 7 |
| Melting/Freezing point: | 20 - 26°C |
| Boiling point/range: | 83°C |
| Flash point: | 11°C |
| Evaporation rate: | Not determined. |
| Flammability (solid, gaseous): | Not determined. |
| Explosion limit upper: | 8% |
| Explosion limit lower: | 2.4% |
| Vapor pressure: | 36 mbar @ 20°C |
| Vapor density: | 2.6 (Air = 1) |
| Density: | Not determined. |
| Relative density: | 0.780 |
| Solubilities: | Water soluble. |
| Partition coefficient (n-octanol/water): | Not determined. |
| Auto/Self-ignition temperature: | 480°C |
| Decomposition temperature: | Not determined. |
| Dynamic viscosity: | Not determined. |
| Kinematic viscosity: | Not determined. |
| Explosive properties | Not determined. |
| Oxidizing properties | Not determined. |

Other information

SECTION 10: Stability and reactivity

Reactivity:

Does not react under normal conditions of use and storage.

Chemical stability:

Stable under normal conditions of use and storage.

Possibility of hazardous reactions:

None under normal conditions of use and storage.

Conditions to avoid:

Excess heat, ignition source or flames.

Incompatible materials:

Strong oxidizing agents, Acids, Acid anhydrides, Acid chlorines

Hazardous decomposition products:

Oxides of carbon.

SECTION 11: Toxicological information

Acute toxicity

Assessment: Harmful if inhaled

Safety Data Sheet

According to Canadian Hazardous Products Regulations and WHMIS 2015

Initial preparation date: 08.08.2017

Page 6 of 9

tert-Butanol

Product data: No data available.

Substance data:

| Name | Route | Result |
|--------------|------------|--------------------------------|
| tert-Butanol | dermal | LD50 - Rabbit - > 2000 mg/kg |
| | oral | LD50 - Rat - 2740 mg/kg |
| | inhalation | LC50 - Rat - > 30.3 mg/l - 4 h |

Skin corrosion/irritation

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Serious eye damage/irritation

Assessment: Causes serious eye irritation

Product data: No data available.

Substance data:

| Name | Result |
|--------------|--------------------------------|
| tert-Butanol | Causes serious eye irritation. |

Respiratory or skin sensitization

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Carcinogenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

International Agency for Research on Cancer (IARC): None of the ingredients are listed.

National Toxicology Program (NTP): None of the ingredients are listed.

Germ cell mutagenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Reproductive toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Specific target organ toxicity (single exposure)

Assessment: May cause respiratory irritation

Product data: No data available.

Substance data:

| Name | Result |
|--------------|-----------------------------------|
| tert-Butanol | May cause respiratory irritation. |

Specific target organ toxicity (repeated exposure)

Assessment: Based on available data, the classification criteria are not met.

Safety Data Sheet

According to Canadian Hazardous Products Regulations and WHMIS 2015

Initial preparation date: 08.08.2017

Page 7 of 9

tert-Butanol

Product data: No data available.

Substance data: No data available.

Aspiration toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Information on likely routes of exposure: No data available.

Symptoms related to the physical, chemical and toxicological characteristics: No data available.

Other information: No data available.

SECTION 12: Ecological information

Acute (short-term) toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data:

| Name | Result |
|--------------|---------------------------------------|
| tert-Butanol | LC50 - Fish - 6410 mg/l - 96 h |
| | EC50 - Crustaceans - 5500 mg/l - 48 h |

Chronic (long-term) toxicity

Product data: No data available.

Substance data: No data available.

Persistence and degradability

Product data: No data available.

Substance data: No data available.

Bioaccumulative potential

Product data: No data available.

Substance data: No data available.

Mobility in soil

Product data: No data available.

Substance data: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal methods:

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11)

SECTION 14: Transport information

Canadian Transportation of Dangerous Goods (TDG)

| | |
|-------------------------|----------|
| UN number | UN 1120 |
| UN proper shipping name | Butanols |


Safety Data Sheet

According to Canadian Hazardous Products Regulations and WHMIS 2015


Initial preparation date: 08.08.2017

Page 8 of 9


tert-Butanol

| | | |
|-------------------------------|------|-------------------------------------------------------------------------------------|
| UN transport hazard class(es) | 3 |  |
| Packing group | II | |
| Environmental hazards | None | |
| Special precautions for user | None | |

International Maritime Dangerous Goods (IMDG)

| | | |
|-------------------------------|----------|-------------------------------------------------------------------------------------|
| UN number | UN 1120 | |
| UN proper shipping name | Butanols | |
| UN transport hazard class(es) | 3 |  |
| Packing group | II | |
| Environmental hazards | None | |
| Special precautions for user | None | |

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

| | | |
|-------------------------------|----------|---------------------------------------------------------------------------------------|
| UN number | UN 1120 | |
| UN proper shipping name | Butanols | |
| UN transport hazard class(es) | 3 |  |
| Packing group | II | |
| Environmental hazards | None | |
| Special precautions for user | None | |

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

| | |
|--------------------|------|
| Bulk Name | None |
| Ship type | None |
| Pollution category | None |

SECTION 15: Regulatory information

Canada regulations

Domestic substances list (DSL):

| | | |
|---------|--------------|--------|
| 75-65-0 | tert-Butanol | Listed |
|---------|--------------|--------|

Non-domestic substances list (NDSL): Not determined.

SECTION 16: Other information

Abbreviations and Acronyms: None

Disclaimer:

Safety Data Sheet

According to Canadian Hazardous Products Regulations and WHMIS 2015

Initial preparation date: 08.08.2017

Page 9 of 9

tert-Butanol

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. 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.

NFPA: 2-3-0

HMIS: 2-3-0-X

Initial preparation date: 08.08.2017

End of Safety Data Sheet