

Safety Data Sheet

According to Canadian Hazardous Products Regulations and WHMIS 2015

Initial preparation date: 02.13.2018

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Tetrahydrofuran

SECTION 1: Identification

Product identifier

Product name: Tetrahydrofuran

Product code: S25802

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

Carcinogenicity, category 2

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

H351 Suspected of causing cancer

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

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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
P201 Obtain special instructions before use
P202 Do not handle until all safety precautions have been read and understood
P264 Wash skin thoroughly after handling
P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P271 Use only outdoors or in a well-ventilated area
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
P308+P313 If exposed or concerned: Get medical advice/attention
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
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
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: 109-99-9	Tetrahydrofuran	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 exposed individual 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

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After ingestion:

- Rinse mouth thoroughly
- 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

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Reference to other sections:

Not determined or not applicable.

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	Tetrahydrofuran	109-99-9	Alberta OELs - 8-Hour TWA Exposure Limit: 147 mg/m ³ (50 ppm)
	Tetrahydrofuran	109-99-9	Alberta OELs - 15-minute STEL: 295 mg/m ³ (100 ppm)
	Tetrahydrofuran	109-99-9	British Columbia OELs - 8-Hour TWA Exposure Value: 50 ppm
	Tetrahydrofuran	109-99-9	British Columbia OELs - 15-minute STEL: 100 ppm
	Tetrahydrofuran	109-99-9	Manitoba OELs - 8-Hour Exposure Limit (TLV-TWA): 50 ppm
	Tetrahydrofuran	109-99-9	Manitoba OELs - 15-minute STEL: 100 ppm
	Tetrahydrofuran	109-99-9	Ontario OELs - 8-Hour TWA Exposure Value (TWA): 50 ppm
	Tetrahydrofuran	109-99-9	Ontario OELs - 15-minute STEL (STEL): 100 ppm
	Tetrahydrofuran	109-99-9	Quebec OELs - 8-Hour TWA Exposure Value: 300 mg/m ³ (100 ppm)
	Tetrahydrofuran	109-99-9	Saskatchewan OELs - 8 hour average contamination limit: 50 ppm
	Tetrahydrofuran	109-99-9	Saskatchewan OELs - 15 minute average contamination limit: 100 ppm

Biological limit values:

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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

Appearance (physical state, color):	Clear, colorless liquid
Odor:	Petroleum distillates
Odor threshold:	Not available
pH-value:	7 - 8 (20% aqueous solution)
Melting/Freezing point:	-108.4°C
Boiling point/range:	66°C
Flash point:	-21°C
Evaporation rate:	>1
Flammability (solid, gaseous):	Not available
Explosion limit upper:	11.8%
Explosion limit lower:	2%
Vapor pressure:	200 mbar at 20 °C
Vapor density:	2.5
Density:	Not available
Relative density:	Not available
Solubilities:	Soluble
Partition coefficient (n-octanol/water):	Not available
Auto/Self-ignition temperature:	215°C
Decomposition temperature:	Not available
Dynamic viscosity:	Not available
Kinematic viscosity:	Not available
Explosive properties	Not available
Oxidizing properties	Not available

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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:

None known.

Incompatible materials:

None known.

Hazardous decomposition products:

None known.

SECTION 11: Toxicological information

Acute toxicity

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

Product data: No data available.

Substance data: No data available.

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
Tetrahydrofuran	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: Suspected of causing cancer

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.

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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
Tetrahydrofuran	May cause respiratory irritation.

Specific target organ toxicity (repeated exposure)

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

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: No data available.

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.

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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 2056
UN proper shipping name	Tetrahydrofuran
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 2056
UN proper shipping name	Tetrahydrofuran
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 2056
UN proper shipping name	Tetrahydrofuran
UN transport hazard class(es)	3 
Packing group	II
Environmental hazards	None
Special precautions for user	None

SECTION 15: Regulatory information

Canada regulations

Domestic substances list (DSL):

109-99-9	Tetrahydrofuran	Listed
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Non-domestic substances list (NDSL): Not determined.

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SECTION 16: Other information

Abbreviations and Acronyms: None

Disclaimer:

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

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End of Safety Data Sheet