
1. PRODUCT AND COMPANY IDENTIFICATION

Product name	Tetrahydrofuran
Synonyms	THF, 1,4-Epoxybutane, Diethylene oxide, Cyclotetramethylene oxide, Oxacyclopentane
Grade	ACS, HPLC, Dehydrous
Company	Anaqua Chemicals Supply 1510 Eldridge Parkway, Suite 110-268 Houston, TX 77077, USA
Telephone	(281) 668-0032
Fax	(281) 668-0033

2. COMPOSITION/ INFORMATION ON INGREDIENTS

Formula	C ₄ H ₈ O
CAS-No.	109-99-9
Index-No.	603-025-00-0
Ec-No.	203-726-8
Concentration	> 95 %

3. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquid	Category 2
Eye irritation	Category 2
Specific target organ toxicity- single exposure	Category 3

4. FIRST AID MEASURES

Inhalation	If breathed in, move to fresh air. If not breathing, give artificial respiration. Consult a physician.
Ingestion	Rinse mouth with water. Consult a physician immediately.
Skin Contact	Immediately wash off with plenty of water for at least 15 minutes. Consult a physician.
Eye Contact	Rinse through with plenty of water for at least 15 minutes. Consult a physician.
Note to Physician	Treat symptomatically

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Specific hazards during fire fighting	Combustible material. Container may explode when heated. Vapors may form explosive mixtures with air at ambient temperature and vapors may flash back.
Special protective equipment for fire-fighters	Wear self contained breathing apparatus for fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Use personal protective clothing and ventilation equipments. Avoid breath in vapors, mist or gas. Ensure adequate ventilation.
Environmental precautions	Do not release into drains.
Methods for cleaning up	Soak up with inert absorbent material and dispose in suitable, closed containers.

7. HANDLING AND STORAGE

Handling	Wear personal protective equipments. Avoid breath in vapors, mist or gas. Avoid contact with skin and eye. Keep away from hot surface, open fire and any sources of ignition. Take measures against electrostatic charge.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Protected from light. Keep away from source of ignition.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Occupational exposure controls

Engineering Measures	Ensure that eye washer and emergency showers are close to the work place. Ensure adequate ventilation. Work under hood.
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Personal protective Equipment

Respiratory protection	Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)
Hand protection	Wear appropriate protective gloves.
Eye protection	Tightly fitting safety glasses.
Skin and body protection	Protective clothes should be selected specifically for the work place according to concentration and quantity of the chemical handled.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice. Wash hands and face before breaks and at the end of working day.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Liquid
Color	Colorless
pH	No data available
Oxidizing properties	No data available
Melting point	-108.0 °C (-162.4 °F)
Boiling point	65.0 -67.0 °C (149.0- 152.6 °F)
Flash point	-17.0 °C (1.4 °F)
Ignition temperature	321 °C (610 °F)
Lower explosion limit	1.8 % (V)
Upper explosion limit	11.8 % (V)
Vapor pressure	190.7 hPa (143.0 mmHg) at 20.0 °C (68.0 °F)
Density	0.89 g/mL at 20 °C (68.0 °F)

Water solubility	Soluble
Partition coefficient: n-octanol/ water	log Pow: 0.45
Molecular weight	88.11

10. STABILITY AND REACTIVITY

Storage stability	Stable under recommended storage conditions
Conditions to avoid	Sources of ignition. Excess heat. Exposure to moist or water.
Materials to avoid	Strong oxidizing agents, Hydrides, Bromine.
Hazardous decomposition products	Carbon monoxide, Carbon dioxide

11. TOXICOLOGICAL INFORMATION

Acute toxicity	LD50 Oral 1,650 mg/kg (Rat) LC50 Inhalation 21,000 mg/kg (Rat) 3 h
Skin irritation	No data available
Eye irritation	No data available
Sensitization	No data available
Symptoms of Exposure	Cough, Chest pain, Difficulty in breathing, Central nervous system depression
Specific target organ toxicity – single exposure (GHS)	May cause damage to organs.
Specific target organ toxicity – repeated exposure (GHS)	No data available

12. ECOLOGICAL INFORMATION

Persistence and degradability	No available information
Ecotoxicity	
Toxicity to fish	LC50 2.160 mg/l (Fathead minnow) 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 382 mg/l (Daphnia magna) 24 h
Toxicity to algae	IC5 3.700 mg/l (Green algae) 8 d
Mobility	No available information

13. DISPOSAL CONSIDERATIONS

Product	Chemical should be disposed of in accordance with local environmental regulations. Contact a licensed professional waste disposal service to dispose of this chemical.
Packaging	Empty containers should be disposed of in accordance with local environmental regulations and taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

IATA

UN-Number: 2056 Class: 3 Packing group: II

Proper shipping name: Tetrahydrofuran

IMDG

UN-Number: 2056 Class: 3 Packing group: II

Proper shipping name: Tetrahydrofuran

EMS-No. F-E, S-D

DOT (US)

UN-Number: 2056 Class: 3 Packing group: II

Proper shipping name: Tetrahydrofuran

Reportable Quantity (RQ): 1000 lbs

Marine pollution: No

Poison Inhalation Hazard: No

15. REGULATORY INFORMATION

Hazard statements

H225: Highly flammable liquid and vapour

H303: May be harmful if swallowed

H319: Causes serious eye irritation

H371: May cause damage to organs

Precautionary statements

P210: Keep away from heat/spark/open flames/hot surface.

P260: Do not breathe dust/fume/gas/mist/vapors/spray.

P305 +P351+ P338: If in eyes: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do.

Continue rinsing

OSHA Hazards

Flammable liquid, Target organ effect, Carcinogen

DSL Status

All components of this product are on the Canadian DSL list.

GHS-Labeling

Pictogram



Signal word *Danger*

Labeling according to EC Directive

Symbol(s): Xi- Irritant F- Highly flammable

R-phrase(s): 11-19-36/37

Highly flammable. Cause eye and respiration system irritation. May form explosive peroxide.

S-phrase(s): 16-26-33

Keep away from source of ignition. Do not empty into drains. Take precautionary measures against static discharges.

16. OTHER INFORMATION

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