RICCA CHEMICAL COMPANY®

Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation Tetrahydrofuran, ACS Reagent Grade

Product Number RSOT0050

Other Identifying Product Numbers RSOT0050-4C, RSOT0050-500C

1.2. Recommended Use and Restrictions on Use

General Laboratory Reagent

1.3. Details of the Supplier of the Safety Data Sheet

Company Ricca Chemical Company

Address 412 West Fork Drive

Arlington, TX 76012 USA

Telephone 888-467-4222

1.4. Emergency Telephone Number (24 hours)

CHEMTREC (USA)	800-424-9300
CHEMTREC (International)	1+ 703-527-3887

Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 2: Hazard(s) Identification

2.1. Classification of the Substance or Mixture

Hazard Class	Category	Hazard Statements	Precautionary Statements
Acute Toxicity - Oral	Category 4	H302	P264,P270,P301+P312,P330,P501
Flammable Liquids	Category 2	H225	P210,P233,P240,P241,P242,P243, P280,P303+P361+P353,P370+P378, P403+P235,P501
Serious Eye Damage / Eye Irritation	Category 2	H319	P264,P280,P305+P351+P338, P337+P313
Carcinogenicity	Category 2	H351	P201,P202,P280,P308+P313,P405, P501
Specific Target Organ Toxicity - Single Exposure - Transient Effects	Category 3 - Respiratory Irritation	H335	P261,P271,P304+P340,P312, P403+P233,P405,P501

2.2. GHS Label Elements

Pictograms:

Signal Word: **Danger**

Hazard Statements:

NOTE: Hazard statements may be combined on labels to improve clarity and readability.

Hazard Number	Hazard Statement
H225	Highly flammable liquid and vapor
H302	Harmful if swallowed
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H351	Suspected of causing cancer

Precautionary Statements:

NOTE: Precautionary statements may be combined or consolidated on labels to improve clarity and readability.

Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

Prevention

Precautionary Number	Precautionary Statement
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharge.
P261	Avoid breathing fumes or mist.
P264	Wash hands, arms, and face thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye protection.

Response

Precautionary Number	Precautionary Statement
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	If exposed or concerned: Get medical advice or attention.
P312	Call a poison center or doctor if you feel unwell.
P330	Rinse mouth.
P337+P313	If eye irritation persists: Get medical advice or attention.
P370+P378	In case of fire: Use dry chemical, foam, or carbon dioxide to extinguish.

Storage

Precautionary Number	Precautionary Statement
P403+P233+P235	Store in a well-ventilated place. Keep container tightly closed. Keep cool.
P405	Store locked up.

Disposal

Precautionary Number	Precautionary Statement
P501	Dispose of contents/container to suitable waste stream in accordance with local, state, federal, and international regulations.

2.3. Hazards not Otherwise Classified

No other hazards identified.

2.4. Ingredients of Unknown Acute Toxicity

SECTION 3: Composition / Information on Ingredients

3.1. Components of Substance

Chemical Name (IUPAC)	Common Name and Synonyms	CAS Number	Weight%
1,4-epoxybutane	Tetrahydrofuran; oxacyclopentane; THF	109-99-9	100.00

SECTION 4: First-Aid Measures

4.1. Description of Necessary Measures

Eye Contact: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Causes severe irritation, redness, pain, tearing and burns.

Ingestion: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Induce vomiting immediately as directed by medical personnel. Call a physician immediately.

Inhalation: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Skin Contact: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Causes irritation to skin, symptoms include redness, itching, and pain.

4.2. Most Important Symptoms and Effects, Acute and Delayed

Suspected of causing cancer EYE CONTACT: Causes severe irritation, redness, pain, tearing and burns. SKIN CONTACT: Causes irritation to skin, symptoms include redness, itching, and pain. CHRONIC EFFECTS / CARCINOGENICITY: Repeated or high exposure may cause liver or kidney damage, may affect lungs. Repeated skin exposure can cause dryness, cracking of skin and rash.

4.3. Immediate Medical Attention or Special Treatment Needed

Avoid prolonged breathing of vapor or contact with skin. Harmful if swallowed. Do not pipet by mouth. If ingested, induce vomiting until vomitus is clear. Call a physician. Wash areas of contact with plenty of water. For eyes, get medical attention.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

In case of fire: Use dry chemical, foam, or carbon dioxide to extinguish. Use dry chemical, alcohol foam, or carbon dioxide for extinguishing the surrounding fire. Use water as fog in flooding quantities. Water can be used to dilute spills to non-flammable mixtures.

5.2. Specific Hazards Arising from the Substance or Mixture in a Fire

Highly flammable liquid and vapor Flammable liquid. Vapors are heavier than air and may travel to a source of ignition and flash back.

5.3. Special Protective Equipment and Precautions for Firefighters

Wear full protective clothing and positive pressure self-contained breathing apparatus. Teflon barrier recommended.

SECTION 6: Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Ground and bond container and receiving equipment. Use explosion-proof equipment. Use non-sparking tools. Take action to prevent static discharge. Wear protective gloves and eye protection.

6.2. Cleanup and Containment Methods and Materials

Eliminate all ignition sources. Approach release from upwind. Stop or control the leak, if this can be done without undue risk. Use water spray to cool and disperse vapors, protect personnel, and dilute spills to form nonflammable mixtures. Control runoff and isolate discharged material for proper disposal.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling and Storage Conditions

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up. As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. Store in cool, secure, flammable storage area away from all sources of ignition. Empty containers may be hazardous since they retain product residues. Keep containers closed. Check peroxide content before heating material. Do not breathe vapor.

SECTION 8: Exposure Controls / Personal Protection

8.1. Exposure Limits

U.S. OSHA - Permissible Exposure Limits (PEL) - Time Weighted Averages (TWA)

Chemical Name	CAS Number	Exposure Limit
Tetrahydrofuran	109-99-9	200 ppm TWA; 590 mg/m3 TWA

U.S. OSHA - Permissible Exposure Limits (PEL) - Ceiling Limits

No limits found.

U.S. OSHA - Permissible Exposure Limits (PEL) - Short Term Exposure Limits (STEL)

No limits found.

U.S. OSHA - Specifically Regulated Chemicals

No limits found.

ACGIH - Threshold Limit Values - Ceilings (TLV-C)

No limits found.

ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)

Chemical Name	CAS Number	Exposure Limit
Tetrahydrofuran	109-99-9	100 ppm STEL

ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

Chemical Name	CAS Number	Exposure Limit
Tetrahydrofuran	109-99-9	50 ppm TWA

8.2. Engineering Controls

Use only outdoors or in a well-ventilated area. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limit.

8.3. Individual Protective Measures and Personal Protective Equipment

Respiratory Protection: If the TLV is exceeded, a half-mask organic vapor respirator may be worn for up to 10 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full facepiece organic vapor respirator may be worn for up to 50 times the exposure limit, or the maximum use concentration specified by the respirator supplier, whichever is lowest.

Skin Protection: Chemical resistant gloves.

Eye Protection: Safety glasses or goggles.

Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Physical State:	liquid
Color:	Colorless
Odor:	Data not available.
Odor Threshold:	Data not available.
Melting/Freezing Point:	-108°C
Boiling Point/Range:	66°C
Flammability:	Data not available.
Flammability/Explosive Limits:	11.8%
Flash Point:	-21.2 °C closed cup (ECHA_API)
Auto-Ignition Temperature:	Data not available.
Decomposition Temperature:	Data not available.
pH:	Data not available.
Kinematic Viscosity:	Data not available.
Solubility:	soluble
Vapor Pressure:	173 hPa at 20°C
Evaporation Rate:	Data not available.
Relative Density:	0.89
Relative Vapor Density:	Data not available.
Particle Characteristics:	Data not available.
Partition Coefficient n-octanol/water, log	0.45 at 25°C

SECTION 10: Stability and Reactivity

10.1. Reactivity and Chemical Stability

Distillation or evaporation can concentrate peroxides (if present) to create an explosion hazard.

10.2. Possibility of Hazardous Reactions

Data not available.

10.3. Conditions to Avoid and Incompatible Materials

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Strong oxidizers, Potassium Hydroxide, Sodium Hydroxide, Lithium-Aluminum alloys, heat, sparks, open flame. May attack some forms of plastics and rubber. Peroxides may accumulate upon prolonged storage in presence of air.

10.4. Hazardous Decomposition Products

May occur.

Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity - Oral Exposure:

Oral acute toxicity estimate (ATE): 1650 mg/kg(calculated)

Chemical Name	CAS Number	Toxicity
Tetrahydrofuran	109-99-9	Oral LD50 Rat 1650 mg/kg (Source: JAPAN_GHS)

Acute Toxicity - Dermal Exposure:

Not acutely toxic.

Chemical Name	CAS Number	Toxicity
Tetrahydrofuran	109-99-9	Dermal LD50 Rat >2000 mg/kg (Source: ECHA_API)

Acute Toxicity - Inhalation Exposure:

Not acutely toxic.

Chemical Name	CAS Number	Toxicity
Tetrahydrofuran	109-99-9	Inhalation LC50 Rat >14.7 mg/L 4 h (no deaths occurred, Source: ECHA_API)

11.2 Carcinogenicity:

International Agency for Research on Cancer (IARC)

Chemical Name	CAS Number	Classification
Tetrahydrofuran	109-99-9	Group 2B (Possibly Carcinogenic to Humans) - Monograph 119 [2019]

National Toxicology Program (NTP)

Chemical Name	CAS Number	Classification
Tetrahydrofuran	109-99-9	Male Rat - Some Evidence; Female Rat - No Evidence; Male Mice - No Evidence; Female Mice - Clear Evidence (TR-475)

U.S. OSHA specifically regulated carcinogens

Chemical Name	CAS Number	Classification
	No data found.	

11.3 Additional Toxicology Information:

Harmful if swallowed. Causes serious eye irritation. May cause respiratory irritation. Suspected of causing cancer.

SECTION 12: Ecological Information

12.1. Ecotoxicity

Chemical Name	CAS Number	Species	Exposure	Toxicity
Tetrahydrofuran	109-99-9	Freshwater Fish	Acute	LC50 96 h Pimephales promelas 1970 - 2360 mg/L [flow-through] (EPA); LC50 96 h Pimephales promelas 2700 - 3600 mg/L [static] (IUCLID)

12.2. Persistence and Degradability

Data not available.

12.3. Bioaccumulative Potential

Data not available.

12.4. Mobility in soil

Data not available.

12.5. Other Adverse Ecological Effects

Data not available.

SECTION 13: Disposal Considerations

13.1. Waste Treatment Methods

Data not available.

Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 14: Transportation Information

14.1 Transportation by Land - Department of Transportation (DOT, United States of America)

Sizes: 4 L, 500 mL

UN Number: UN2056

Proper Shipping Name: Tetrahydrofuran

Hazard Class: 3

Packing Group: II

Hazard Label(s):

14.2 Transportation by Air - International Air Transport Association (IATA)

Sizes: 4 L, 500 mL

UN Number: UN2056

Proper Shipping Name: Tetrahydrofuran

Hazard Class: 3

Packing Group: II

Hazard Label(s):

14.3 Transportation of Dangerous Goods (TDG, Canada)

Sizes: 4 L, 500 mL

UN Number: UN2056

Proper Shipping Name: TETRAHYDROFURAN

Hazard Class: 3

Packing Group: II

Hazard Label(s):

Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 15: Regulatory Information

15.01. Occupational Safety and Health Administration (OSHA) Hazards

Chemical Name	CAS Number	Regulatory Information
		No data found.

15.02. Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

Chemical Name	CAS Number	RQ
		No data found.

15.03. Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

Chemical Name	CAS Number	Regulatory Information
Tetrahydrofuran	109-99-9	1000 lb final RQ; 454 kg final RQ

15.04. Superfund Amendments and Reauthorization Act (SARA) 313 Toxics Release Inventory (TRI)

Chemical Name	CAS Number	List
		No data found.

15.05. Massachusetts Right-to-Know Substance List

Chemical Name	CAS Number	Regulatory Information
Tetrahydrofuran	109-99-9	Present

15.06. Pennsylvania Right-to-Know Hazardous Substances

Chemical Name	CAS Number	Regulatory Information
Tetrahydrofuran	109-99-9	Environmental hazard

15.07. New Jersey Worker and Community Right-to-Know Components

Chemical Name	CAS Number	Regulatory Information
Tetrahydrofuran	109-99-9	sn 1823

15.08. California Proposition 65

Chemical Name	CAS Number	Regulatory Information
Tetrahydrofuran	109-99-9	carcinogen, 12/17/2021

15.09. Canada Domestic Substances List / Non-Domestic Substances List (DSL/NDSL)

Chemical Name	CAS Number	List	Status
Tetrahydrofuran	109-99-9	DSL	Present

15.10. United States of America Toxic Substances Control Act (TSCA) List

Chemical Name	CAS Number	Status
Tetrahydrofuran	109-99-9	Present (ACTIVE)

15.11. European Inventory of Existing Commercial Chemical Substances (EINECS), European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

Chemical Name	CAS Number	List	Number
Tetrahydrofuran	109-99-9	EINECS	203-726-8

15.12. China - Inventory of Existing chemical Substances (IECSC)

Chemical Name	CAS Number	Status
Tetrahydrofuran	109-99-9	Present [32901]

15.13. Korea - Existing Chemicals Inventory (KECI/KECL)

Chemical Name	CAS Number	List	Status
Tetrahydrofuran	109-99-9	Annex 1	Present [KE-33454]

15.14. Japan - Existing and New Chemical Substances Inventory (ENCS)

Chemical Name	CAS Number	MITI No.
Tetrahydrofuran	109-99-9	(5)-53

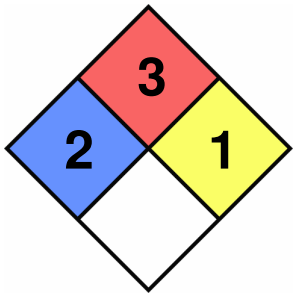
SECTION 16: Other Information

Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

16.1 National Fire Protection Associate (NFPA) Rating

Health:	2
Flammability:	3
Reactivity	1
Special Hazard:	



16.2 Document Revision

Last Revision Date:
2026-05-04

DISCLAIMER

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.