RICCA CHEMICAL COMPANY®

# Safety Data Sheet

Classified According to Canada Hazardous Product Regulations SOR/2015-17 (HPR 2022)

## 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 |

### 1.5. Distributor Address

Ricca Chemical Company
412 West Fork Drive
Arlington, TX 76012 USA

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## SECTION 2: Hazard Identification

### 2.1. Classification of the Hazardous Product

| 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.

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### 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 First-Aid 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.

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## SECTION 9: Physical and Chemical Properties

### 9.1. 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.

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## 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.

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## 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):**

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## 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

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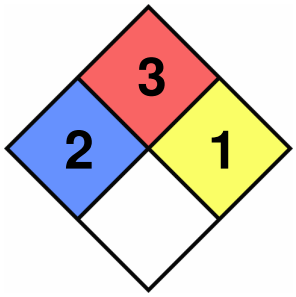
## 16.1 National Fire Protection Associate (NFPA) Rating

**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.