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 Dioxane ACS

Product Number RSOD0100

Other Identifying Product Numbers RSOD0100-4C

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

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SECTION 2: Hazard(s) Identification

2.1. Classification of the Substance or Mixture

Hazard Class	Category	Hazard Statements	Precautionary Statements
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
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.

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.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye protection.

Response

Precautionary Number	Precautionary Statement
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.
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%
1,2-dioxane	Dioxane; p-Dioxane	123-91-1	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: Dilute immediately with water or milk. Induce vomiting. Call a physician.

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. Mild to severe irritation and possible burns. On prolonged exposure, can be absorbed through intact skin causing toxic systemic effects.

4.2. Most Important Symptoms and Effects, Acute and Delayed

Suspected of causing cancer DANGER! Tends to form explosive peroxides. Flammable liquid and vapor. Harmful if inhaled, swallowed or absorbed through skin. Causes irritation to skin, eyes and respiratory tract. Dioxane is a suspected carcinogen. Wash areas of contact with plenty of water. If swallowed, give large amount of water and induce vomiting. Call a physician. EYE CONTACT: Causes severe irritation, redness, pain, tearing and burns. SKIN CONTACT: Mild to severe irritation and possible burns. On prolonged exposure, can be absorbed through intact skin causing toxic systemic effects. CHRONIC EFFECTS / CARCINOGENICITY: Suspected human carcinogen. Prolonged skin contact may cause dermatitis. Prolonged exposure may cause central nevous system depression, loss of appetite, nausea, abdominal tenderness and liver or kidney damage. Repeated inhalation exposures to low concentrations have been fatal.

4.3. Immediate Medical Attention or Special Treatment Needed

Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops. Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Flush with plenty of water for at least 15 minutes. Call a physician if irritation develops. Dilute immediately with water or milk. Induce vomiting. Call a physician.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

In case of fire: Use dry chemical, foam, or carbon dioxide to extinguish. Carbon dioxide, alcohol foam, dry chemical powder Water may be ineffective.

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. Peroxide formation may occur in containers that have been opened and remain in storage. Peroxides can be detonated by friction, impact, or heating.

5.3. Special Protective Equipment and Precautions for Firefighters

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

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 secure, flammable storage area away from all sources of ignition. Empty containers may be hazardous since they retain product residues.

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
Dioxane	123-91-1	100 ppm TWA; 360 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)

No limits found.

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

Chemical Name	CAS Number	Exposure Limit
Dioxane	123-91-1	20 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. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source. Use explosion proof equipment.

8.3. Individual Protective Measures and Personal Protective Equipment

Respiratory Protection: Work with adequate ventilation or wear respirator with acid gas/organic vapor cartridge.

Skin Protection: Chemical resistant gloves.

Eye Protection: Safety glasses or goggles.

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SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Physical State:	Liquid
Color:	clear, colorless
Odor:	Data not available.
Odor Threshold:	Data not available.
Melting/Freezing Point:	11.8°C
Boiling Point/Range:	101°C
Flammability:	Data not available.
Flammability/Explosive Limits:	Data not available.
Flash Point:	11 °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:	miscible
Vapor Pressure:	Data not available.
Evaporation Rate:	Data not available.
Relative Density:	1.03
Relative Vapor Density:	Data not available.
Particle Characteristics:	Data not available.
Partition Coefficient n-octanol/water, log	Data not available.

SECTION 10: Stability and Reactivity

10.1. Reactivity and Chemical Stability

Stable under normal conditions of use and storage.

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. Silver perchlorate, oxidizing agents, sulfur trioxide.

10.4. Hazardous Decomposition Products

Will not occur.

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SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity - Oral Exposure:

No information found.

Acute Toxicity - Dermal Exposure:

No information found.

Acute Toxicity - Inhalation Exposure:

Inhalation acute toxicity estimate (ATE, vapor): 23.0000 mg/L, 4 h(calculated)

Chemical Name	CAS Number	Toxicity
Dioxane	123-91-1	Inhalation LC50 Rat 46 mg/L 2 h (vapor, Source: JAPAN_GHS)

11.2 Carcinogenicity:

International Agency for Research on Cancer (IARC)

Chemical Name	CAS Number	Classification
Dioxane	123-91-1	Group 2B (Possibly Carcinogenic to Humans) - Monograph 71 [1999]; Supplement 7 [1987]; Monograph 11 [1976]

National Toxicology Program (NTP)

Chemical Name	CAS Number	Classification
Dioxane	123-91-1	Reasonably Anticipated To Be A Human Carcinogen; Male Rat - Clear Evidence; Female Rat - Clear Evidence; Male Mice - Clear Evidence; Female Mice - Clear Evidence (TR-080)

U.S. OSHA specifically regulated carcinogens

Chemical Name	CAS Number	Classification
	No data found.	

11.3 Additional Toxicology Information:

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

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SECTION 12: Ecological Information

12.1. Ecotoxicity

Chemical Name	CAS Number	Species	Exposure	Toxicity
Dioxane	123-91-1	Freshwater Fish	Acute	LC50 96 h Lepomis macrochirus >10000 mg/L [static] (EPA); LC50 96 h Lepomis macrochirus >10000 mg/L [semi-static] (IUCLID); LC50 96 h Pimephales promelas 9850 mg/L [flow-through] (EPA); LC50 96 h Pimephales promelas 10306 - 14742 mg/L [static] (EPA); LC50 96 h Pimephales promelas 9850 mg/L (IUCLID)
Dioxane	123-91-1	Water Flea	Acute	EC50 48 h water flea 163 mg/L [Static]
Dioxane	123-91-1	Water Flea	Chronic	NOEC 21 d Daphnia magna 1000 mg/L [semi-static] (reproduction, ECHA_API)

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

UN Number: UN1165

Proper Shipping Name: Dioxane

Hazard Class: 3

Packing Group: II

Hazard Label(s):

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

Sizes: 4 L

UN Number: UN1165

Proper Shipping Name: Dioxane

Hazard Class: 3

Packing Group: II

Hazard Label(s):

14.3 Transportation of Dangerous Goods (TDG, Canada)

Sizes: 4 L

UN Number: UN1165

Proper Shipping Name: DIOXANE

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
Dioxane	123-91-1	100 lb final RQ; 45.4 kg final RQ

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

Chemical Name	CAS Number	List	Regulatory Information
Dioxane	123-91-1	Emission Reporting	0.1 % de minimis concentration

15.05. Massachusetts Right-to-Know Substance List

Chemical Name	CAS Number	Regulatory Information
Dioxane	123-91-1	Carcinogen (including technical grade); Extraordinarily hazardous (including technical grade)

15.06. Pennsylvania Right-to-Know Hazardous Substances

Chemical Name	CAS Number	Regulatory Information
Dioxane	123-91-1	Environmental hazard; Special hazardous substance

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

Chemical Name	CAS Number	Regulatory Information
Dioxane	123-91-1	sn 0789

15.08. California Proposition 65

Chemical Name	CAS Number	Regulatory Information
Dioxane	123-91-1	carcinogen, 1/1/1988
Dioxane	123-91-1	30 µg/day NSRL

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

Chemical Name	CAS Number	List	Status
Dioxane	123-91-1	DSL	Present

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

Chemical Name	CAS Number	Status
Dioxane	123-91-1	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
Dioxane	123-91-1	EINECS	204-661-8

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

Chemical Name	CAS Number	Status
Dioxane	123-91-1	Present [07496]

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

Chemical Name	CAS Number	List	Status
Dioxane	123-91-1	Annex 1	Present [KE-10463]

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

Chemical Name	CAS Number	MITI No.
Dioxane	123-91-1	(5)-839

SECTION 16: Other Information

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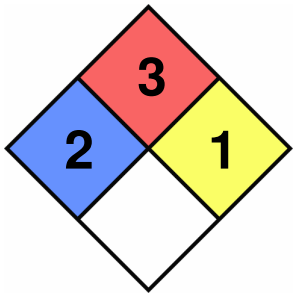
16.1 National Fire Protection Associate (NFPA) Rating

Health: 2
Flammability: 3
Reactivity 1
Special Hazard:



16.2 Document Revision

Last Revision Date:
2026-05-23

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.