



Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation Malic Acid Standard, 10,000 ppm $C_4H_6O_5$ in 10% (v/v) Ethanol

Product Number R4584100

Other Identifying Product Numbers R4584100-100A

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 3	H226	P210,P233,P240,P241,P242,P243, P280,P303+P361+P353,P370+P378, P403+P235,P501
Skin Corrosion / Irritation	Category 2	H315	P264,P280,P302+P352,P321, P332+P313,P362+P364
Serious Eye Damage / Eye Irritation	Category 2	H319	P264,P280,P305+P351+P338, P337+P313

2.2. GHS Label Elements

Pictograms:



Signal Word: **Warning**

Hazard Statements:

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

Hazard Number	Hazard Statement
H226	Flammable liquid and vapor
H315	Causes skin irritation
H319	Causes serious eye irritation

Precautionary Statements:

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Prevention

Precautionary Number	Precautionary Statement
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
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.
P264	Wash hands, arms, and face thoroughly after handling.
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.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313	If skin irritation occurs: Get medical advice or attention.
P337+P313	If eye irritation persists: Get medical advice or attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use dry chemical, foam, or carbon dioxide to extinguish.

Storage

Precautionary Number	Precautionary Statement
P403+P235	Store in a well-ventilated place. Keep cool.

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

1 percent of this mixture consists of ingredient(s) of unknown acute oral and inhalation toxicity. 8.9 percent of this mixture consists of ingredient(s) of unknown acute dermal toxicity.

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SECTION 3: Composition / Information on Ingredients

3.1. Components of Mixture

Chemical Name (IUPAC)	Common Name and Synonyms	CAS Number	Weight%
water	Water	7732-18-5	91.11
ethanol	Ethyl Alcohol	64-17-5	7.89
(2S)-2-hydroxybutanedioic acid	L-(-)-Malic Acid	97-67-6	1.00

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. May cause irritation with burning and stinging with possible damage to the cornea and conjunctiva.

Ingestion: Dilute with water or milk. Do not induce vomiting. Call a physician if necessary.

Inhalation: Not expected to require first aid. If necessary, remove to fresh air.

Skin Contact: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Results in drying and cracking which can lead to secondary infections and dermatitis.

4.2. Most Important Symptoms and Effects, Acute and Delayed

Causes skin irritation Does not present any significant health hazards. May cause slight irritation to areas of contact. Wash areas of contact with water. EYE CONTACT: May cause irritation with burning and stinging with possible damage to the cornea and conjunctiva. SKIN CONTACT: Results in drying and cracking which can lead to secondary infections and dermatitis.

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 with water or milk. Do not induce vomiting. Call a physician if necessary.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

In case of fire: Use dry chemical, foam, or carbon dioxide to extinguish. Water, dry chemical, foam, or carbon dioxide. Water spray may be used to keep fire-exposed containers cool.

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

Flammable liquid and vapor Slight fire hazard when subject to high heat, containers may explode in fire.

5.3. Special Protective Equipment and Precautions for Firefighters

Use protective clothing and NIOSH-approved breathing equipment appropriate for the surrounding fire.

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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

Absorb with inert material (vermiculite, sand). Ventilate, if necessary, site of spillage well to evaporate remaining liquid and dispel vapor. Do not flush to sewer. Always comply with local, state, and federal regulations.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling and Storage Conditions

Store in a well-ventilated place. Keep cool. As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage.

SECTION 8: Exposure Controls / Personal Protection

8.1. Exposure Limits

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

Chemical Name	CAS Number	Exposure Limit
Ethyl Alcohol	64-17-5	1000 ppm TWA; 1900 mg/m ³ 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
Ethyl Alcohol	64-17-5	1000 ppm STEL

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

No limits found.

8.2. Engineering Controls

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: Normal room ventilation is adequate. If the exposure limit is exceeded, a full facepiece respirator with organic vapor cartridge may be worn.

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:	Colorless
Odor:	Data not available.
Odor Threshold:	Data not available.
Melting/Freezing Point:	Approximately 0°C
Boiling Point/Range:	Approximately 100°C
Flammability:	Data not available.
Flammability/Explosive Limits:	Data not available.
Flash Point:	50 °C (calculated)
Auto-Ignition Temperature:	Data not available.
Decomposition Temperature:	Data not available.
pH:	N/A
Kinematic Viscosity:	Data not available.
Solubility:	miscible
Vapor Pressure:	Data not available.
Evaporation Rate:	Data not available.
Relative Density:	1.0
Relative Vapor Density:	Data not available.
Particle Characteristics:	Data not available.
Partition Coefficient n-octanol/water, log	Data not available.

NOTE: Flash point was calculated according to the method of Gmeling and Rasmussen (Ind. Eng. Chem. Fundament, 21, 186, (1982)), as allowed by GHS Rev 7, section 2.6.4.2.3.

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. Keep container tightly closed. Strong oxidizing agents such as Nitrates, Perchlorates or Sulfuric Acid, heat, sparks, open flame. Will attack some forms of plastics, rubber and coatings.

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.

Chemical Name	CAS Number	Toxicity
Ethyl Alcohol	64-17-5	Oral LD50 Rat 7060 mg/kg (Source: NLM_CIP)

Acute Toxicity - Dermal Exposure:

No information found.

Acute Toxicity - Inhalation Exposure:

No information found.

Chemical Name	CAS Number	Toxicity
Ethyl Alcohol	64-17-5	Inhalation LC50 Rat 116.9 mg/L 4 h (males, vapor, Source: ECHA_API); Inhalation LC50 Rat 133.8 mg/L 4 h (females, vapor, Source: ECHA_API)

11.2 Carcinogenicity:

International Agency for Research on Cancer (IARC)

Chemical Name	CAS Number	Classification
		No data found.

National Toxicology Program (NTP)

Chemical Name	CAS Number	Classification
Ethyl Alcohol	64-17-5	Male Rat - Not Tested; Female Rat - Not Tested; Male Mice - Inadequate Experiment; Female Mice - Inadequate Experiment (TR-510)

U.S. OSHA specifically regulated carcinogens

Chemical Name	CAS Number	Classification
		No data found.

11.3 Additional Toxicology Information:

Causes skin irritation. Causes serious eye irritation.

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SECTION 12: Ecological Information

12.1. Ecotoxicity

Chemical Name	CAS Number	Species	Exposure	Toxicity
Ethyl Alcohol	64-17-5	Earthworm	Acute	LC50 48 h Eisenia foetida 0.1 - 1 mg/cm2 [filter paper] (IUCLID)
Ethyl Alcohol	64-17-5	Freshwater Fish	Acute	LC50 96 h Oncorhynchus mykiss 12.0 - 16.0 mL/L [static] (EPA); LC50 96 h Pimephales promelas >100 mg/L [static] (EPA); LC50 96 h Pimephales promelas 13400 - 15100 mg/L [flow-through] (EPA)
Ethyl Alcohol	64-17-5	Water Flea	Acute	LC50 48 h Daphnia magna 9268 - 14221 mg/L (IUCLID); EC50 48 h Daphnia magna 2 mg/L [Static] (EPA)

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)

Not regulated according to DOT regulations.

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

Not regulated according to IATA Dangerous Goods Regulations.

14.3 Transportation of Dangerous Goods (TDG, Canada)

Not regulated according to TDG regulations.

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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
No data found.		

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
Ethyl Alcohol	64-17-5	Teratogen

15.06. Pennsylvania Right-to-Know Hazardous Substances

Chemical Name	CAS Number	Regulatory Information
Ethyl Alcohol	64-17-5	Present

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

Chemical Name	CAS Number	Regulatory Information
Ethyl Alcohol	64-17-5	sn 0844

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15.08. California Proposition 65

Chemical Name	CAS Number	Regulatory Information
Ethyl Alcohol	64-17-5	"carcinogen, 7/1/1988 (when associated with alcohol abuse); carcinogen, 4/29/2011" As Alcoholic beverages [RR-01961-4]
Ethyl Alcohol	64-17-5	"developmental toxicity, 10/1/1987 (listed under Ethyl alcohol in alcoholic beverages)" As Alcoholic beverages [RR-01961-4]

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

Chemical Name	CAS Number	List	Status
Ethyl Alcohol	64-17-5	DSL	Present
Ethyl Alcohol	64-17-5	NDSL	"Present" As Alcohols, C1-3 [68475-56-9]
Water	7732-18-5	DSL	Present
L-(-)-Malic Acid	97-67-6	DSL	Present

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

Chemical Name	CAS Number	Status
Ethyl Alcohol	64-17-5	Present (ACTIVE)
Water	7732-18-5	Present [XU] (ACTIVE)
L-(-)-Malic Acid	97-67-6	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
Ethyl Alcohol	64-17-5	EINECS	200-578-6
Water	7732-18-5	EINECS	231-791-2
L-(-)-Malic Acid	97-67-6	EINECS	202-601-5

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

Chemical Name	CAS Number	Status
Ethyl Alcohol	64-17-5	Present [38125]
Water	7732-18-5	Present [32224]
L-(-)-Malic Acid	97-67-6	Present [26285]

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

Chemical Name	CAS Number	List	Status
Ethyl Alcohol	64-17-5	Annex 1	Present [KE-13217]
Water	7732-18-5	Annex 1	Present [KE-35400]
L-(-)-Malic Acid	97-67-6	Annex 1	Present [KE-20884]

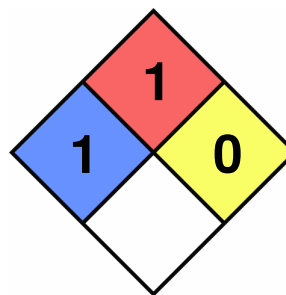
15.14. Japan - Existing and New Chemical Substances Inventory (ENCS)

Chemical Name	CAS Number	MITI No.
Ethyl Alcohol	64-17-5	(2)-202
Water	7732-18-5	- (listed on Japanese Pharmacopoeia 8th Edition)
L-(-)-Malic Acid	97-67-6	(2)-1442

SECTION 16: Other Information

16.1 National Fire Protection Associate (NFPA) Rating

Health: 1
Flammability: 1
Reactivity: 0
Special Hazard:



16.2 Document Revision

Last Revision Date:
 2026-05-07

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.