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 Methylene Blue, 1% (w/v) in Denatured Alcohol

Product Number 4864

Other Identifying Product Numbers 4864-16, 4864-32, 4864-4

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

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SECTION 2: Hazard(s) Identification

2.1. Classification of the Substance or Mixture

Hazard Class	Category	Hazard Statements	Precautionary Statements
Acute Toxicity - Dermal	Category 3	H311	P280,P302+P352,P312,P321, P361+P364,P405,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
Reproductive Toxicity	Category 1B	H360	P201,P202,P280,P308+P313,P405, P501
Specific Target Organ Toxicity - Single Exposure	Category 2	H371	P260,P264,P270,P308+P311, 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
H311	Toxic in contact with skin
H319	Causes serious eye irritation
H360	May damage fertility or the unborn child
H371	May cause damage to organs

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.
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.
P260	Do not breathe fumes or mist.
P264	Wash hands, arms, and face thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
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.
P308+P311	If exposed or concerned: Call a poison center or doctor.
P337+P313	If eye irritation persists: Get medical advice or attention.
P361+P364	Take off immediately all 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.
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

95.3 percent of this mixture consists of ingredient(s) of unknown acute dermal toxicity. 1.3 percent of this mixture consists of ingredient(s) of unknown acute inhalation toxicity.

SECTION 3: Composition / Information on Ingredients

3.1. Components of Mixture

Chemical Name (IUPAC)	Common Name and Synonyms	CAS Number	Weight%
ethanol	Ethyl Alcohol	64-17-5	94.05
methanol	Methyl Alcohol	67-56-1	4.70
[7-(dimethylamino)phenothiazin-3-ylidene]-dimethylazanium chloride trihydrate	Methylene Blue Trihydrate	7220-79-3	1.25

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 immediately with water or milk. Induce vomiting. Call a physician.

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

Toxic in contact with skin Flammable liquid. Primarily toxic by ingestion. If ingested, give large quantity of water and induce vomiting. Call a physician. Contact may cause dryness and cracking of the skin. May cause irritation to the eyes. Wash areas of contact with plenty of water. May cause irritation of the respiratory system. 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. Wash areas of contact with soap and 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. 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 Vapors can flow along surfaces to distant ignition source and flashback. Use water spray to blanket fire, cool fire exposed containers, and to flush non-ignited spills or vapors away from fire. Explosion hazard when exposed to heat, flame or oxidizers.

5.3. Special Protective Equipment and Precautions for Firefighters

Wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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

Remove all sources of ignition. Contain spill. Do not flush to sewer. Absorb with suitable inert material (vermiculite, dry sand, etc) and place in a chemical waste container for proper disposal in an approved waste disposal facility. Ventilate area of spill. Have extinguishing agent available in case of fire. Use non-sparking tools and equipment. Dispose of in accordance with local regulations.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling and Storage Conditions

Store in a well-ventilated place. 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
Ethyl Alcohol	64-17-5	1000 ppm TWA; 1900 mg/m3 TWA
Methyl Alcohol	67-56-1	200 ppm TWA; 260 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
Ethyl Alcohol	64-17-5	1000 ppm STEL
Methyl Alcohol	67-56-1	250 ppm STEL

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

Chemical Name	CAS Number	Exposure Limit
Methyl Alcohol	67-56-1	200 ppm TWA

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.

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:	Blue
Odor:	Data not available.
Odor Threshold:	Data not available.
Melting/Freezing Point:	Data not available.
Boiling Point/Range:	Approximately 77°C
Flammability:	Data not available.
Flammability/Explosive Limits:	Data not available. - 19%
Flash Point:	12.7°C (Dortmund Data Bank)
Auto-Ignition Temperature:	Data not available.
Decomposition Temperature:	Data not available.
pH:	Data not available.
Kinematic Viscosity:	Data not available.
Solubility:	Data not available.
Vapor Pressure:	Data not available.
Evaporation Rate:	Data not available.
Relative Density:	0.8
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. Keep container tightly closed. Oxidizers, platinum, Sodium, Potassium Dioxide, Bromine Pentafluoride, Acetyl Bromide, Acetyl Chloride, heat, sparks, open flame.

10.4. Hazardous Decomposition Products

Will not occur.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity - Oral Exposure:

Oral acute toxicity estimate (ATE): 2080 mg/kg(calculated)

Chemical Name	CAS Number	Toxicity
Ethyl Alcohol	64-17-5	Oral LD50 Rat 7060 mg/kg (Source: NLM_CIP)
Methyl Alcohol	67-56-1	Oral LD50 Acute Toxicity Estimate 100 mg/kg (Source: ECHA)
Methylene Blue Trihydrate	7220-79-3	Oral LD50 Rat 1180 mg/kg (Source: NLM_CIP) As Methylene Blue [61-73-4]

Acute Toxicity - Dermal Exposure:

Dermal acute toxicity estimate (ATE): 300 mg/kg(calculated)

Chemical Name	CAS Number	Toxicity
Methyl Alcohol	67-56-1	Dermal LD50 Acute Toxicity Estimate 300 mg/kg (Source: ECHA)

Acute Toxicity - Inhalation Exposure:

Inhalation acute toxicity estimate (ATE, vapor): 63.8298 mg/L, 4 h(calculated)

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)
Methyl Alcohol	67-56-1	Inhalation LC50 Acute Toxicity Estimate 3 mg/L 4 h (Source: ECHA)

11.2 Carcinogenicity:

International Agency for Research on Cancer (IARC)

Chemical Name	CAS Number	Classification
Methylene Blue Trihydrate	7220-79-3	Group 3 (Not Classified) - Monograph 108 [2016] (listed under Methylene blue)

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)
Methylene Blue Trihydrate	7220-79-3	Male Rat - Some Evidence; Female Rat - No Evidence; Male Mice - Some Evidence; Female Mice - Equivocal Evidence (TR-540)

U.S. OSHA specifically regulated carcinogens

Chemical Name	CAS Number	Classification
	No data found.	

11.3 Additional Toxicology Information:

Toxic in contact with skin. Causes serious eye irritation. May damage fertility or the unborn child. May cause damage to organs.

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)
Methyl Alcohol	67-56-1	Earthworm	Acute	LC50 48 h Eisenia foetida >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)
Methyl Alcohol	67-56-1	Freshwater Fish	Acute	LC50 96 h Pimephales promelas 28200 mg/L [flow-through] (EPA); LC50 96 h Pimephales promelas >100 mg/L [static] (EPA); LC50 96 h Oncorhynchus mykiss 19500 - 20700 mg/L [flow-through] (EPA); LC50 96 h Oncorhynchus mykiss 18 - 20 mL/L [static] (EPA); LC50 96 h Lepomis macrochirus 13500 - 17600 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.

SECTION 14: Transportation Information

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

Sizes: 1 L, 120 mL, 500 mL

UN Number: UN1987

Proper Shipping Name: Alcohols, n.o.s. (Ethanol, Methanol)

Hazard Class: 3

Packing Group: II

Hazard Label(s):



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

Sizes: 1 L, 120 mL, 500 mL

UN Number: UN1987

Proper Shipping Name: Alcohols, n.o.s. (Ethanol, Methanol)

Hazard Class: 3

Packing Group: II

Hazard Label(s):



Safety Data Sheet

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14.3 Transportation of Dangerous Goods (TDG, Canada)

Sizes: 1 L, 120 mL, 500 mL

UN Number: UN1987

Proper Shipping Name: ALCOHOLS, N.O.S. (ethanol, methanol)

Hazard Class: 3

Packing Group: II

Hazard Label(s):



SECTION 15: Regulatory Information

Safety Data Sheet

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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
Methyl Alcohol	67-56-1	5000 lb final RQ; 2270 kg final RQ

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

Chemical Name	CAS Number	List	Regulatory Information
Methyl Alcohol	67-56-1	Emission Reporting	1.0 % de minimis concentration

15.05. Massachusetts Right-to-Know Substance List

Chemical Name	CAS Number	Regulatory Information
Ethyl Alcohol	64-17-5	Teratogen
Methyl Alcohol	67-56-1	Present

15.06. Pennsylvania Right-to-Know Hazardous Substances

Chemical Name	CAS Number	Regulatory Information
Ethyl Alcohol	64-17-5	Present
Methyl Alcohol	67-56-1	Environmental hazard

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

Chemical Name	CAS Number	Regulatory Information
Ethyl Alcohol	64-17-5	sn 0844
Methyl Alcohol	67-56-1	sn 1222

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]
Methyl Alcohol	67-56-1	developmental toxicity, 3/16/2012

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]
Methyl Alcohol	67-56-1	DSL	Present
Methyl Alcohol	67-56-1	NDSL	"Present" As Alcohols, C1-3 [68475-56-9]
Methylene Blue Trihydrate	7220-79-3	DSL	"Present" As Phenothiazin-5-ium, 3,7-bis(dimethylamino)-, chloride [61-73-4]

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

Chemical Name	CAS Number	Status
Ethyl Alcohol	64-17-5	Present (ACTIVE)
Methyl Alcohol	67-56-1	Present (ACTIVE)
Methylene Blue Trihydrate	7220-79-3	"Present (ACTIVE)" As Phenothiazin-5-ium, 3,7-bis(dimethylamino)-, chloride (1:1) [61-73-4]

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
Methyl Alcohol	67-56-1	EINECS	200-659-6
Methylene Blue Trihydrate	7220-79-3	EINECS	"200-515-2" As Methylthioninium chloride [61-73-4]

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

Chemical Name	CAS Number	Status
Ethyl Alcohol	64-17-5	Present [38125]
Methyl Alcohol	67-56-1	Present [16735]
Methylene Blue Trihydrate	7220-79-3	"Present [20899]" As Basic turquoise BB [61-73-4]

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

Chemical Name	CAS Number	List	Status
Ethyl Alcohol	64-17-5	Annex 1	Present [KE-13217]
Methyl Alcohol	67-56-1	Annex 1	Present [KE-23193]
Methylene Blue Trihydrate	7220-79-3	Annex 1	"Present [KE-06942]" As Methylene Blue [61-73-4]

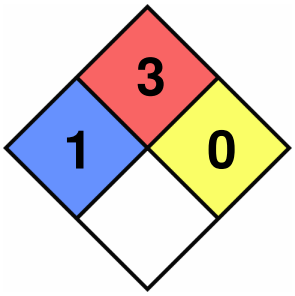
15.14. Japan - Existing and New Chemical Substances Inventory (ENCS)

Chemical Name	CAS Number	MITI No.
Ethyl Alcohol	64-17-5	(2)-202
Methyl Alcohol	67-56-1	(2)-201
Methylene Blue Trihydrate	7220-79-3	"(5)-1995" As 3,7-Bis(N,N-dimethylamino)phenothiazin-5-ium chloride [61-73-4]

SECTION 16: Other Information

16.1 National Fire Protection Associate (NFPA) Rating

Health: 1
Flammability: 3
Reactivity 0
Special Hazard:



16.2 Document Revision

Last Revision Date:
2026-05-22

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.