



## Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

### SECTION 1: Identification

#### 1.1. Product Identifier

**Trade Name or Designation** 2,2'-Bipyridine, 1% (w/v) in Methanol

**Product Number** R0990000

**Other Identifying Product Numbers** R0990000-1C

#### 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 3                    | H301              | P264,P270,P301+P310,P321,P330, P405,P501                                     |
| Acute Toxicity - Dermal                                              | Category 3                    | H311              | P280,P302+P352,P312,P321, P361+P364,P405,P501                                |
| Acute Toxicity - Inhalation (Vapors)                                 | Category 3                    | H331              | P261,P271,P304+P340,P311, P321,P403+P233,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                                          |
| Specific Target Organ Toxicity - Single Exposure - Transient Effects | Category 3 - Narcotic Effects | H336              | 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                      |
| H301+H311+H331 | Toxic if swallowed, in contact with skin or if inhaled |
| H319           | Causes serious eye irritation                          |
| H336           | May cause drowsiness or dizziness                      |
| H360           | May damage fertility or the unborn child               |
| H371           | May cause damage to organs                             |

# Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

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

### Response

| Precautionary Number | Precautionary Statement                                                                                                          |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------|
| P301+P310            | IF SWALLOWED: Immediately call a POISON CENTER or doctor.                                                                        |
| 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+P311            | If exposed or concerned: Call a poison center or doctor.                                                                         |
| P330                 | Rinse mouth.                                                                                                                     |
| 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+P233+P235       | Store in a well-ventilated place. Keep container tightly closed. Keep cool. |
| P405                 | Store locked up.                                                            |

### Disposal

| Precautionary Number | Precautionary Statement |
|----------------------|-------------------------|
|----------------------|-------------------------|

## Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

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

1.3 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% |
|------------------------|--------------------------|------------|---------|
| methanol               | Methyl Alcohol           | 67-56-1    | 98.75   |
| 2-pyridin-2-ylpyridine | 2,2'-Bipyridine          | 366-18-7   | 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:** IF SWALLOWED: Immediately call a POISON CENTER or doctor. 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. Results in drying and cracking which can lead to secondary infections and dermatitis. Dermal absorption causes many of the symptoms of inhalation.

### 4.2. Most Important Symptoms and Effects, Acute and Delayed

May damage fertility or the unborn child Flammable liquid. Primarily toxic by ingestion. Cannot be made non-poisonous. 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 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. Dermal absorption causes many of the symptoms of inhalation.

### 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.

# Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

## SECTION 5: Fire-Fighting Measures

### 5.1. Extinguishing Media

In case of fire: Use dry chemical, foam, or carbon dioxide to extinguish. Use water spray, dry chemical, alcohol foam, or carbon dioxide for extinguishing the surrounding fire. Water spray 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 Moderate explosion hazard and dangerous fire hazard when exposed to heat, sparks and open flames. Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Sensitive to static discharge.

### 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 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

## Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

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

| Chemical Name  | CAS Number | Exposure Limit             |
|----------------|------------|----------------------------|
| 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 |
|----------------|------------|----------------|
| 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

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:** 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

|                                                   |                                      |
|---------------------------------------------------|--------------------------------------|
| <b>Physical State:</b>                            | liquid                               |
| <b>Color:</b>                                     | Colorless to yellow                  |
| <b>Odor:</b>                                      | slight, alcohol-like                 |
| <b>Odor Threshold:</b>                            | Data not available.                  |
| <b>Melting/Freezing Point:</b>                    | -98°C                                |
| <b>Boiling Point/Range:</b>                       | Approximately 64.5°C                 |
| <b>Flammability:</b>                              | Data not available.                  |
| <b>Flammability/Explosive Limits:</b>             | Data not available. - 36% (Methanol) |
| <b>Flash Point:</b>                               | 9.7 °C closed cup (ECHA_API)         |
| <b>Auto-Ignition Temperature:</b>                 | Data not available.                  |
| <b>Decomposition Temperature:</b>                 | Data not available.                  |
| <b>pH:</b>                                        | N/A                                  |
| <b>Kinematic Viscosity:</b>                       | Data not available.                  |
| <b>Solubility:</b>                                | miscible at 20°C                     |
| <b>Vapor Pressure:</b>                            | 128 hPa at 20°C                      |
| <b>Evaporation Rate:</b>                          | 2.1 (butyl acetate = 1)              |
| <b>Relative Density:</b>                          | 0.8                                  |
| <b>Relative Vapor Density:</b>                    | 1.1                                  |
| <b>Particle Characteristics:</b>                  | Data not available.                  |
| <b>Partition Coefficient n-octanol/water, log</b> | -0.77                                |

## 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. Strong oxidizing agents such as Nitrates, Perchlorates or Sulfuric Acid, heat, sparks, open flame. Will attack some forms of plastics, rubber and coatings. May react with metallic aluminum and generate hydrogen gas.

### 10.4. Hazardous Decomposition Products

Will not 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): 100 mg/kg(calculated)

| Chemical Name   | CAS Number | Toxicity                                                   |
|-----------------|------------|------------------------------------------------------------|
| 2,2'-Bipyridine | 366-18-7   | Oral LD50 Rat 100 mg/kg (Source: NLM_CIP)                  |
| Methyl Alcohol  | 67-56-1    | Oral LD50 Acute Toxicity Estimate 100 mg/kg (Source: ECHA) |

##### Acute Toxicity - Dermal Exposure:

Dermal acute toxicity estimate (ATE): 299 mg/kg(calculated)

| Chemical Name   | CAS Number | Toxicity                                                     |
|-----------------|------------|--------------------------------------------------------------|
| 2,2'-Bipyridine | 366-18-7   | Dermal LD50 Rat 250 mg/kg (Source: IUCLID)                   |
| 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): 3.0380 mg/L, 4 h(calculated)

| Chemical Name  | CAS Number | Toxicity                                                          |
|----------------|------------|-------------------------------------------------------------------|
| 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 |
|----------------|------------|----------------|
| No data found. |            |                |

##### National Toxicology Program (NTP)

| Chemical Name  | CAS Number | Classification |
|----------------|------------|----------------|
| No data found. |            |                |

##### U.S. OSHA specifically regulated carcinogens

| Chemical Name  | CAS Number | Classification |
|----------------|------------|----------------|
| No data found. |            |                |

## Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

### 11.3 Additional Toxicology Information:

Toxic if swallowed, in contact with skin or if inhaled. Causes serious eye irritation. May cause drowsiness or dizziness. 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                                                                                                                                                                                                                                                                                                                       |
|----------------|------------|-----------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Methyl Alcohol | 67-56-1    | Earthworm       | Acute    | LC50 48 h Eisenia foetida >1 mg/cm2 [filter paper] (IUCLID)                                                                                                                                                                                                                                                                    |
| 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) |

### 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

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## SECTION 14: Transportation Information

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

Sizes: 1 L

UN Number: UN1230

Proper Shipping Name: Methanol Solution

Hazard Class: 3

Packing Group: II

Hazard Label(s):



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

Sizes: 1 L

UN Number: UN1230

Proper Shipping Name: Methanol Solution

Hazard Class: 3 (6.1)

Packing Group: II

Hazard Label(s):



### 14.3 Transportation of Dangerous Goods (TDG, Canada)

Sizes: 1 L

UN Number: UN1230

Proper Shipping Name: METHANOL SOLUTION

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             |
|----------------|------------|------------------------------------|
| 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 |
|----------------|------------|------------------------|
| Methyl Alcohol | 67-56-1    | Present                |

#### 15.06. Pennsylvania Right-to-Know Hazardous Substances

| Chemical Name  | CAS Number | Regulatory Information |
|----------------|------------|------------------------|
| Methyl Alcohol | 67-56-1    | Environmental hazard   |

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

| Chemical Name  | CAS Number | Regulatory Information |
|----------------|------------|------------------------|
| Methyl Alcohol | 67-56-1    | sn 1222                |

## Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

### 15.08. California Proposition 65

| Chemical Name  | CAS Number | Regulatory Information            |
|----------------|------------|-----------------------------------|
| 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                                   |
|-----------------|------------|------|------------------------------------------|
| 2,2'-Bipyridine | 366-18-7   | DSL  | Present                                  |
| Methyl Alcohol  | 67-56-1    | DSL  | Present                                  |
| Methyl Alcohol  | 67-56-1    | NDSL | "Present" As Alcohols, C1-3 [68475-56-9] |

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

| Chemical Name   | CAS Number | Status           |
|-----------------|------------|------------------|
| 2,2'-Bipyridine | 366-18-7   | Present (ACTIVE) |
| Methyl Alcohol  | 67-56-1    | 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    |
|-----------------|------------|--------|-----------|
| 2,2'-Bipyridine | 366-18-7   | EINECS | 206-674-4 |
| Methyl Alcohol  | 67-56-1    | EINECS | 200-659-6 |

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

| Chemical Name   | CAS Number | Status          |
|-----------------|------------|-----------------|
| 2,2'-Bipyridine | 366-18-7   | Present [22064] |
| Methyl Alcohol  | 67-56-1    | Present [16735] |

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

| Chemical Name   | CAS Number | List    | Status             |
|-----------------|------------|---------|--------------------|
| 2,2'-Bipyridine | 366-18-7   | Annex 1 | Present [KE-12238] |
| Methyl Alcohol  | 67-56-1    | Annex 1 | Present [KE-23193] |

## Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

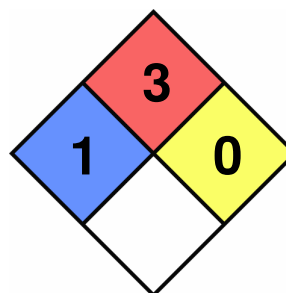
### 15.14. Japan - Existing and New Chemical Substances Inventory (ENCS)

| Chemical Name   | CAS Number | MITI No. |
|-----------------|------------|----------|
| 2,2'-Bipyridine | 366-18-7   | (5)-3723 |
| Methyl Alcohol  | 67-56-1    | (2)-201  |

## 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:**  
 2026-05-07

## 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.