

## SECTION 1 Identification of the substance/mixture and of the company

### 1.1 Product identifier

- Product Name: **Nutrient Agar**
- Product Part Number: **7145**

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

- Use of the substance/preparation: For the cultivation of a wide variety of microorganisms. Conforms to FDA/BAM formulation.
- Use advised against: No information available

### 1.3 Details of the supplier of the safety data sheet

- Name of Manufacturer: Acumedia Manufacturers, Inc.
- Address of Manufacturer: 740 East Shiawassee  
Lansing, Michigan 48912  
USA
- Telephone: 517/372-9200
- Email: [foodsafety@neogen.com](mailto:foodsafety@neogen.com)

### 1.4 Emergency telephone number

- Emergency Telephone: Chemtrec: (800) 424-9300  
Outside USA and Canada: +1 (703) 527-3887
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## SECTION 2 Hazards identification

### 2.1 Classification of the substance or mixture

- Classification (REGULATION (EC) No 1272/2008) [CLP/GHS]
- Not classified as hazardous for supply
- Classification (67/548/EEC, 1999/45/EC) (OSHA 29 CFR 1910.1200)
- Not classified as hazardous for supply
- Additional information: For full text of R-phrases and Hazard- and EU Hazard-statements: see section 16

### 2.2 Label elements

- Signal Word: None
- Symbols: None
- Hazard phrases  
None
- Precautionary Phrases  
Keep container tightly closed.  
Do not breathe dust  
Do not get in eyes, on skin, or on clothing.

### 2.3 Other hazards

- Mildly irritating to skin and eyes
  - Mildly irritating to respiratory system
- 

## SECTION 3 Composition/information on ingredients

### 3.1 Substances

### 3.2 Mixtures

- This product does not contain any hazardous substances at the concentration limits given in Regulation (EC) No. 1272/2008 and OSHA Hazard Communication Standard 29 CFR 1910.1200
-

## SECTION 4 First aid measures

### 4.1 Description of first aid measures

- Contact with skin
  - Remove contaminated clothing
  - Wash affected area with plenty of soap and water
  - If skin irritation or rash occurs: Get medical advice/attention.
  - Contaminated clothing should be laundered before reuse
- Contact with eyes
  - If substance has gotten into eyes, immediately wash out with plenty of water for at least 15 minutes
  - Irrigate eyes thoroughly while lifting eyelids
  - Seek medical advice if necessary
- Ingestion
  - Rinse mouth with water (do not swallow)
  - Never make an unconscious person vomit or drink fluids
  - If medical advice is needed, have product container or label at hand.
- Inhalation
  - If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
  - Call a POISON CENTER or doctor/physician if you feel unwell.

### 4.2 Most important symptoms and effects, both acute and delayed

- May cause irritation

### 4.3 Indication of any immediate medical attention and special treatment needed

- Treat symptomatically
- 

## SECTION 5 Fire-fighting measures

### 5.1 Extinguishing media

- In case of fire: use foam, carbon dioxide or dry agent for extinction

### 5.2 Special hazards arising from the substance or mixture

- Smoke from fires is toxic. Take precautions to protect personnel from exposure
- Decomposition products may include carbon oxides
- May form explosive dust/air mixtures
- See Section 10

### 5.3 Advice for firefighters

- Keep container(s) exposed to fire cool, by spraying with water
  - Wear chemical protection suit and positive-pressure breathing apparatus
  - Wear protective clothing as per section 8
- 

## SECTION 6 Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

- Shut off all ignition sources
- Use non-sparking hand tools

## SECTION 6 Accidental release measures (continued)

- Avoid raising dust
- Remove contaminated clothing
- Wear protective clothing as per section 8
- Wash thoroughly after dealing with spillage

### 6.2 Environmental Precautions

- Do not allow to enter public sewers and watercourses
- Avoid scattering in the environment

### 6.3 Methods and material for containment and cleaning up

- Absorb spillage in inert material and shovel up
- Place in sealable container
- Seal containers and label them
- Seek expert advice for removal and disposal of all contaminated materials and wastes
- Ventilate the area and wash spill site after material pick-up is complete

### 6.4 Reference to other sections

- See Section 7
- 

## SECTION 7 Handling and storage

### 7.1 Precautions for safe handling

- Do not breathe dust
- Avoid contact with skin and eyes
- Do not eat, drink or smoke when using this product.
- Ensure adequate ventilation
- Eyewash bottles should be available
- Wash hands thoroughly after using this substance

### 7.2 Conditions for safe storage, including any incompatibilities

- Store at temperatures not exceeding 30°C/86°F. Keep cool.
- Store in a well-ventilated place. Keep container tightly closed.
- Store in a dry place.
- Keep away from oxidizing substances
- Keep away from acid

### 7.3 Specific end use(s)

- For the cultivation of a wide variety of microorganisms. Conforms to FDA/BAM formulation.
- 

## SECTION 8 Exposure controls/personal protection

### 8.1 Control parameters

- There are no recommended or established controls for this product

### 8.2 Exposure controls

- Eyewash bottles should be available
- Engineering controls should be provided to prevent the need for ventilation
- No respiratory protection is needed if ventilation/extraction is adequate, otherwise wear approved dust mask, N95 (US) or type FFP1 (EN143) dust masks.
- Wear protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and standard EN 374.
- Wear safety glasses approved to standard for NIOSH (US) or EN 166.

## SECTION 8 Exposure controls/personal protection (continued)

- Wear suitable protective clothing



Gloves



Safety  
Glasses



Lab Coat

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## SECTION 9 Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- Appearance: Homogenous, free-flowing powder, Beige
- Odor: No information available
- pH: Not applicable
- Melting point/Range: No information available
- Boiling Point/Range: Not determined
- Flashpoint: No information available
- Evaporation Rate: No information available
- Flammability: No information available
- Vapor Pressure: No information available
- Vapor Density: No information available
- Specific Gravity: No information available
- Solubility in water: Completely soluble in water
- Partition Coefficient (n-Octanol/Water): No information available
- Autoignition Temperature Product is not self-igniting
- Viscosity: No information available
- Explosive Properties: Product does not present an explosion hazard
- Oxidizing Properties: No information available

### 9.2 Other information

- No information available

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## SECTION 10 Stability and reactivity

### 10.1 Reactivity

- No information available

### 10.2 Chemical stability

- Considered stable under normal conditions

### 10.3 Possibility of hazardous reactions

- No hazardous reactions known if used for its intended purpose

### 10.4 Conditions to avoid

- Avoid contact with moisture
- Keep away from heat and sources of ignition

### 10.5 Incompatible materials

- Incompatible with oxidizing substances

### 10.6 Hazardous Decomposition Products

- Decomposition products may include carbon oxides

## SECTION 11 Toxicological information

### 11.1 Information on toxicological effects

- No experimental data available
  - Contact with skin
    - May cause redness and irritation
  - Contact with eyes
    - May cause redness and irritation
  - Ingestion
    - May cause irritation of the throat
  - Inhalation
    - May cause coughing
  - Carcinogenicity
    - No evidence of carcinogenic effects
  - Mutagenicity
    - No evidence of mutagenic effects
  - Teratogenicity
    - No information available
- 

## SECTION 12 Ecological information

### 12.1 Toxicity

- No information available

### 12.2 Persistence and degradability

- No information available

### 12.3 Bioaccumulation Potential

- No information available

### 12.4 Mobility in soil

- No information available

### 12.5 Results of PBT and vPvB assessment

- Not a PBT according to REACH Annex XIII
- PBT/vPvB assessment not available

### 12.6 Other Adverse Effects

- To the best of our knowledge, the properties of this material have not been fully evaluated
  - On available data, substance is not harmful to the environment
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## SECTION 13 Disposal considerations

### 13.1 Waste treatment methods

- Disposal should be in accordance with local, state or national legislation
- Do not discharge into drains or the environment, dispose to an authorized waste collection point
- Do not reuse empty containers without commercial cleaning or reconditioning
- Refer to manufacturer/supplier for information on recovery/recycling

### 13.2 Classification (REACH)

- Waste Codes in accordance with the European Waste catalogue (EWC) are origin-defined. Since this product is used in several industries, no Waste Code can be provided by the supplier. The Waste Code should be determined in arrangement with your waste disposal partner or the responsible authority.
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## SECTION 14 Transport information

### 14.1 UN Number

Not classified as hazardous for transport

### 14.2 UN Proper Shipping Name

- Not applicable

### 14.3 Transport hazard class(es)

- Not applicable

### 14.4 Packing group

- Not applicable

### 14.5 Environmental hazards

- Not Classified

### 14.6 Special precautions for user

- Not Classified

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code

- Not Classified

### 14.8 DOT

- Proper Shipping Name: Not applicable
- DOT UN No.: Not applicable
- DOT Hazard Class: Not applicable
- DOT Packing Group: Not applicable

### 14.9 Road/Rail (ADR/RID)

- Proper Shipping Name: Not applicable
- ADR UN No.: Not applicable
- ADR Hazard Class: Not applicable
- ADR Packing Group: Not applicable
- Tunnel Code: Not applicable

### 14.10 Sea (IMDG)

- Proper Shipping Name: Not applicable
- IMDG UN No.: Not applicable
- IMDG Hazard Class: Not applicable
- IMDG Pack Group.: Not applicable

### 14.11 Air (ICAO/IATA)

- Proper Shipping Name: Not applicable
  - ICAO Un No.: Not applicable
  - ICAO Hazard Class: Not applicable
  - ICAO Packing Group: Not applicable
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## SECTION 15 Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- This Safety Data Sheet is provided in compliance with the EC Directive 1907/2006-453/2010 and OSHA Hazard Communication Standard 29 CFR 1910.1200.
- Regulation (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) applies in Europe

### 15.2 Chemical Safety Assessment

- No information available

### 15.3 United States Regulatory Information

## SECTION 15 Regulatory information (continued)

### SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

SARA 313: The material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### SARA 311/312

No SARA Hazards

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## SECTION 16 Other information

This document is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. Neogen Corporation shall not be held liable for any damage resulting from handling or from contact with the above product. These suggestions should not be confused with state, municipal or insurance requirements, and constitute NO WARRANTY.

**Section 1 Chemical Product and Company Information****HOME SCIENCE TOOLS**

665 Carbon Street  
Billings, MT 59102  
800-860-6272  
www.homesciencetools.com

**CHEMTREC 24 Hour Emergency**  
**Phone Number (800) 424-9300**  
For laboratory use only.  
Not for drug, food or household use.

<b>Product</b>	<b>BENEDICT'S QUALITATIVE SOLUTION</b>
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<b>Synonyms</b>	Benedict's Sugar Test Reagent ; Benedict's Solution ; Benedict's Qualitative Reagent
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**Section 2 Hazards Identification****Signal word:** WARNING**Pictograms:** GHS07 / GHS09**Target organs:** Liver, kidneys.**GHS Classification:**

Skin irritation (Category 3)

Eye irritation (Category 2B)

Acute toxicity, oral (Category 4)

Acute toxicity, dermal (Category 5)

Acute toxicity, inhalation (Category 4)

Aquatic toxicity (Category 1)

**GHS Label information: Hazard statement(s):**

H302: Harmful if swallowed.

H313: May be harmful in contact with skin.

H316: Causes mild skin irritation.

H320: Causes eye irritation.

H332: Harmful if inhaled.

H410: Very toxic to aquatic life with long lasting effects.

**Precautionary statement(s):**

P261: Avoid breathing mist/vapours/spray.

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P271: Use only outdoors or in a well-ventilated area.

P273: Avoid release to the environment.

P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P332+P313: If skin irritation occurs: Get medical attention.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313: If eye irritation persists: Get medical attention.

P391: Collect spillage.

P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**Section 3 Composition / Information on Ingredients**

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	77.9%	231-791-2
Sodium citrate	68-04-2	13.7%	200-675-3
Sodium carbonate	497-19-8	6.9%	207-838-8
Cupric sulfate, pentahydrate	7758-99-8	1.5%	231-847-6 (anhydrous)

**Section 4 First Aid Measures**

**INGESTION:** Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

**Section 5 Fire Fighting Measures**

**Suitable Extinguishing Media:** Use any media suitable for extinguishing supporting fire.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

**Section 6 Accidental Release Measures**

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.



## Section 7 Handling & Storage

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

**Handling:** Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale vapors, spray or mist. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Storage:** Store in a cool, well-ventilated area away from incompatible substances.

## Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Cupric sulfate	TWA: 0.2 mg/m <sup>3</sup> copper fume as Cu	None established.	None established.

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical & Chemical Properties

**Appearance:** Clear, pale blue liquid.

**Odor:** No odor.

**Odor threshold:** N/A

**pH:** N/A

**Melting / Freezing point:** ~ 0°C (~ 32°F) [water]

**Boiling point:** ~ 100°C (212°F) [water]

**Flash point:** Not flammable.

**Evaporation rate ( = 1):** < 1

**Flammability (solid/gas):** N/A

**Explosion limits: Upper:** N/A **Lower:** N/A

**Vapor pressure (mm Hg):** 14 [water]

**Vapor density (Air = 1):** 0.7 [water]

**Relative density (Specific gravity):** 1.0 [water]

**Solubility(ies):** Complete.

**Partition coefficient: (n-octanol / water):** N/A

**Auto-ignition temperature:** N/A

**Decomposition temperature:** N/A

**Viscosity:** N/A

**Molecular formula:** Mixture.

**Molecular weight:** Mixture.

## Section 10 Stability & Reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures which cause evaporation.

**Incompatibilities with other materials:** Acids and strong oxidizers.

**Hazardous decomposition products:** Carbon oxides.

## Section 11 Toxicological Information

**Acute toxicity:** Oral-rat LD50: 300 mg/kg (Copper sulfate) - Dermal-rat LD50: >1000 mg/kg (Copper sulfate) - Inhalation-rat LC50: 2.3 mg/l 2 hour (Sodium carbonate)

**Skin corrosion/irritation:** Slightly irritating

**Serious eye damage/irritation:** Slightly irritating

**Respiratory or skin sensitization:** Not a sensitizer

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

Skin: Contact may cause irritation.

Eyes: Contact may cause irritation.

**Signs and symptoms of exposure:** To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

**Additional information: RTECS #:** Not available for this mixture.

## Section 12 Ecological Information

**Toxicity to fish:** *Salmo gairdneri* (Fish, estuary, fresh water) LC50: < .75-.84 mg/l

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport Information

**UN/NA number:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Not applicable

**2012 ERG Guide #:** Not applicable

## Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
All components listed with TSCA.						

## Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure.

## Section 1 Chemical Product and Company Information

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**HOME SCIENCE TOOLS**

665 Carbon Street  
Billings, MT 59102  
800-860-6272  
www.homesciencetools.com

**CHEMTREC 24 Hour Emergency**  
**Phone Number (800) 424-9300**  
For laboratory use only.  
Not for drug, food or household use.

<b>Product</b>	<b>CALCIUM HYDROXIDE</b>
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<b>Synonyms</b>	Hydrated Lime / Slaked Lime / Caustic Lime / Calcium Hydrate
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## Section 2 Hazards Identification

**Signal word:** DANGER**Pictograms:** GHS05**Target organs:** Eyes, Skin, Respiratory system**GHS Classification:**

Skin corrosion (Category 1B)

Eye damage (Category 1)

**GHS Label information: Hazard statement:**

H314: Causes severe skin burns and eye damage.

**Precautionary statement:**

P260: Do not breathe dust.

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P363: Wash contaminated clothing before reuse.

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P310: Immediately call a POISON CENTER or doctor.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405: Store locked up.

P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

## Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Calcium hydroxide	1305-62-0	>98%	215-137-3

## Section 4 First Aid Measures

**INGESTION:** HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** CAUSES SEVERE BURNS AND EYE DAMAGE. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire Fighting Measures

**Suitable Extinguishing Media:** Use any media suitable for extinguishing supporting fire.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

## Section 6 Accidental Release Measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Recover for reuse if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, dry, well-ventilated area away from incompatible substances.

## Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Calcium hydroxide	TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup> Respirable fraction	TWA: 5 mg/m <sup>3</sup>

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical &amp; Chemical Properties

**Appearance:** Solid. White to yellow powder.

**Odor:** No odor.

**Odor threshold:** Data not available.

**pH:** Data not available.

**Melting / Freezing point:** as CaO 2850°C (5162°F)

**Boiling point:** as CaO 579°C (1076°F)

**Flash point:** Not flammable

**Evaporation rate ( = 1):** Data not available

**Flammability (solid/gas):** Data not available.

**Explosion limits: Lower / Upper:** Data not available

**Vapor pressure (mm Hg):** Data not available

**Vapor density (Air = 1):** Data not available

**Relative density (Specific gravity):** 2.24

**Solubility(ies):** 0.185% @ 0°C in water.

**Partition coefficient:** Data not available

**Auto-ignition temperature:** Data not available

**Decomposition temperature:** Data not available.

**Viscosity:** Data not available.

**Molecular formula:** Ca(OH)<sub>2</sub>

**Molecular weight:** 74.10

## Section 10 Stability &amp; Reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Absorbs CO<sub>2</sub> from air to form calcium carbonate.

**Incompatible materials:** Acids, fluorine.

**Hazardous decomposition products:** None known.

## Section 11 Toxicological Information

**Acute toxicity:** Oral-rat LD50: 7340 mg/kg

**Skin corrosion/irritation:** Skin-rabbit - Irritant.

**Serious eye damage/irritation:** Eyes-rabbit - Severe irritant

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: Inhalation may cause sore throat, burning sensation.

Ingestion: Ingestion may cause burning sensation, abdominal pain, abdominal cramps, vomiting.

Skin: Contact with skin causes redness, roughness, pain, dry skin, burns, blisters.

Eyes: Contact with eyes causes redness, pain, severe deep burns.

**Signs and symptoms of exposure:** Exercise appropriate procedures to minimize potential hazards.

**Additional information:** RTECS #: EW2800000

## Section 12 Ecological Information

**Toxicity to fish:** *Gambusia affinis* (fish, fresh water), LC50 = 220 mg/L/48 hours

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport Information (US DOT / CANADA TDG)

**UN/NA number:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No


**Marine pollutant:** No

**Exceptions:** Not applicable

**2012 ERG Guide #:** Not applicable

## Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Calcium hydroxide	Listed	Not listed	D002	Listed	Not listed	 E

## Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

**Section 1 Chemical Product and Company Information****HOME SCIENCE TOOLS**

665 Carbon Street  
Billings, MT 59102  
800-860-6272  
www.homesciencetools.com

**CHEMTREC 24 Hour Emergency**  
**Phone Number (800) 424-9300**  
For laboratory use only.  
Not for drug, food or household use.

<b>Product</b>	<b>IODINE-POTASSIUM IODIDE SOLUTION</b>
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<b>Synonyms</b>	Iodine-Iodide / Iodine Solution / Iodine / Iodine Lugol's Dilute / Gram's Iodine Solution / Iodine 2% / Dilute Lugol's Solution
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**Section 2 Hazards Identification****Signal word:** WARNING**Pictograms:** GHS07 / GHS09**Target organs:** Thyroid, kidneys, endocrine system, skin, eyes, reproductive system, central nervous system.**GHS Classification:**

Acute toxicity, oral (Category 4)

Acute toxicity, inhalation (Category 4)

Aquatic Acute (Category 1)

**GHS Label information: Hazard statement(s):**

H312: Harmful in contact with skin.

H332: Harmful if inhaled.

H400: Very toxic to aquatic life.

**Precautionary statement(s):**

P261: Avoid breathing mist/vapours/spray.

P271: Use only outdoors or in a well-ventilated area.

P273: Avoid release to the environment.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P302/352: IF ON SKIN: Wash with plenty of soap and water.

P304/340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P312: Call a POISON CENTER or doctor/physician if you feel unwell.

P362: Take off contaminated clothing and wash before reuse.

P391: Collect spillage.

P501: Dispose of contents/container to an approved waste disposal plant.

**Ca Prop 65** - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**Section 3 Composition / Information on Ingredients**

Nommé Chimique	# CAS	%	EINECS
Water	7732-18-5	95.10%	231-791-2
Potassium iodide	7681-11-0	3.05%	231-659-4
Iodine	7553-56-2	1.85%	231-442-4

**Section 4 First Aid Measures**

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** HARMFUL IF INHALED. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. Harmful if inhaled.

**EYE CONTACT:** MAY CAUSE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** HARMFUL IN CONTACT WITH SKIN. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention. Harmful in contact with skin.

**Section 5 Fire Fighting Measures**

**Extinguishing Media:** Use any media suitable for extinguishing supporting fire.

**General information:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

**Section 6 Accidental Release Measures**

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

## Section 7 Handling & Storage

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. Keep out of reach of children. Use with adequate ventilation. Wash thoroughly after handling.

**Handling:** Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale vapors, mist or spray. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Storage:** Store in a cool, well-ventilated area away from incompatible substances.

## Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Iodine CAS # 7553-56-2	TWA: 0.01 ppm <sup>(FV)</sup> / STEL: 0.1 ppm <sup>(V)</sup>	STEL: C 0.1 ppm/C 1 mg/m <sup>3</sup>	STEL: C 0.1 ppm/C 1 mg/m <sup>3</sup>

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical & Chemical Properties

<b>Appearance:</b> Deep amber liquid. <b>Odor:</b> Characteristic odor. <b>Odor threshold:</b> Not applicable. <b>pH:</b> Data not available. <b>Melting / Freezing point:</b> ~ 0°C (~ 32°F) [water] <b>Boiling point:</b> ~ 100°C (212°F) [water] <b>Flash point:</b> Not flammable.	<b>Evaporation rate ( Water = 1):</b> < 1 <b>Flammability (solid/gas):</b> Not applicable. <b>Explosion limits: Lower / Upper:</b> Not applicable <b>Vapor pressure (mm Hg):</b> 14 [water] <b>Vapor density (Air = 1):</b> 0.7 [water] <b>Relative density (Specific gravity):</b> 1.0 [water] <b>Solubility(ies):</b> Complete in water.	<b>Partition coefficient: (n-octanol / water):</b> Not applicable <b>Auto-ignition temperature:</b> Not applicable <b>Decomposition temperature:</b> Data not available. <b>Viscosity:</b> Data not available. <b>Molecular formula:</b> Mixture <b>Molecular weight:</b> Mixture
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## Section 10 Stability & Reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Stable under recommended storage conditions. Excessive temperatures which cause evaporation.

**Incompatibilities with other materials:** Metals or unsaturated organic compounds, ammonia solutions or alkaline solutions of ammonia salts. Will form explosive nitrogen iodides when reacted with gaseous ammonia.

**Hazardous decomposition products:** Toxic iodide fumes.

## Section 11 Toxicological Information

**Acute toxicity:** Oral-Rat LD50: 14,000 mg/kg [Iodine CAS # 7553-56-2]

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Inhalation-rat 3.1 mg/m<sup>3</sup> / 24 hour / 13 weeks - continuous [Iodine CAS # 7553-56-2]

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

**IARC:** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**NTP:** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**OSHA:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: Symptoms include cough, wheezing, and labored breathing. Symptoms may be delayed.

Ingestion: Causes abdominal pain, diarrhea, nausea, and vomiting. Ingestion of levels of 2-3 grams of iodine may cause death.

Skin: Contact may cause redness and pain.

Eyes: Contact causes watering of the eyes, redness and pain.

**Signs and symptoms of exposure:** Effects of short-term exposure: Lachrymator. The substance is severely irritating to the eyes and the respiratory tract, and is irritating to the skin. Inhalation of the vapor may cause asthma-like reactions. Inhalation of the vapor may cause lung edema. The effects may be delayed. Effects of long-term exposure: Repeated or prolonged contact may cause skin sensitization in rate cases. Repeated or prolonged inhalation exposure may cause asthma-like syndrome. The substance may have effects on the thyroid. Specific data not available for this mixture. Exercise appropriate procedures to minimize potential hazards..

**Additional information:** RTECS #: NN1575000 [Iodine CAS # 7553-56-2]

## Section 12 Ecological Information

**Toxicity to fish:** Very toxic to aquatic life.

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport Information

**UN/NA number:** None assigned

**Shipping name:** Not Regulated.

**Hazard class:** None assigned **Packing group:** None assigned **Reportable Quantity:** No **Marine pollutant:** No **Exceptions:** No

## Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Iodine	Listed	Not listed	Not listed	Listed	Not listed	E; D2A
Potassium iodide	Listed	Not listed	Not listed	Listed	Not listed	D2A

## Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure.

**Section 1 Chemical Product and Company Information****HOME SCIENCE TOOLS**

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**CHEMTREC 24 Hour Emergency  
Phone Number (800) 424-9300**  
For laboratory use only.  
Not for drug, food or household use.

<b>Product</b>	<b>METHYLENE BLUE CHLORIDE, 1% AQUEOUS SOLUTION</b>
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<b>Synonyms</b>	Methylene Blue Chloride, Water Solution
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**Section 2 Hazards Identification**

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

**Signal word:** WARNING  
**Pictograms:** None assigned  
**Target organs:** None known

**GHS Classification:**  
Acute toxicity, oral (Category 5)

**GHS Label information:**  
**Hazard statement(s):**  
H303: May be harmful if swallowed.

**Precautionary statement(s):**

P312: Call a POISON CENTER or doctor if you feel unwell.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**Section 3 Composition / Information on Ingredients**

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	98.9%	231-791-2
Methylene blue chloride	61-73-4	1.0%	200-515-2
Sodium benzoate, as preservative	532-32-1	0.2%	208-534-8

**Section 4 First Aid Measures**

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** MAY CAUSE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

**Section 5 Fire Fighting Measures**

**Suitable Extinguishing Media:** Use any media suitable for extinguishing supporting fire.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

**Section 6 Accidental Release Measures**

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Section 7 Handling & Storage**

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, well-ventilated area away from incompatible substances.

**Section 8 Exposure Controls / Personal Protection**

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Methylene blue chloride	None established.	None established.	None established.

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

**Section 9 Physical & Chemical Properties**

**Appearance:** Dark blue liquid.

**Odor:** No odor.

**Odor threshold:** Data not available.

**pH:** Data not available.

**Melting / Freezing point:** ~0°C (32°F) (water)

**Boiling point:** ~100°C (212°F) (water)

**Flash point:** Data not available.

**Evaporation rate ( Water = 1):** <1

**Flammability (solid/gas):** Data not available.

**Explosion limits: Lower / Upper:** Data not available.

**Vapor pressure (mm Hg):** 14 (water)

**Vapor density (Air = 1):** 0.7 (water)

**Relative density (Specific gravity):** Approximately 1.1

**Solubility(ies):** Complete in water.

**Partition coefficient:** Data not available.

**Auto-ignition temperature:** Data not available.

**Decomposition temperature:** Data not available.

**Viscosity:** Data not available.

**Molecular formula:** Mixture

**Molecular weight:** Mixture

**Section 10 Stability & Reactivity**

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures which cause evaporation. Stable under recommended storage conditions.

**Incompatibilities with other materials:** Strong oxidizing materials and reducers.

**Hazardous decomposition products:** Sulfur oxides, nitrogen oxides, hydrogen chloride gas.

**Section 11 Toxicological Information**

**Acute toxicity:** Oral-rat LD50: 1180 mg/kg [Methylene blue chloride] / Oral-rat LD50: 2100 mg/kg [Sodium benzoate]

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: May cause respiratory irritation.

Ingestion: May be harmful if swallowed.

Skin: Contact with skin may cause irritation.

Eyes: Contact with eyes may cause irritation.

**Signs and symptoms of exposure:** To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

**Additional information:** RTECS #: SP5740000 [Methylene blue chloride] / DH6650000 [Sodium benzoate]

**Section 12 Ecological Information**

**Toxicity to fish:** No data available

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

**Section 13 Disposal Considerations**

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

**Section 14 Transport Information**

**UN/NA number:** None

**Shipping name:** Not Regulated

**Hazard class:** None

**Packing group:** None

**Reportable Quantity:** None

**Marine pollutant:** None

**Exceptions:** None

**Section 15 Regulatory Information**

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERCLA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Methylene blue chloride	Listed	Not listed	Not listed	Listed	Not listed	Uncontrolled product
Sodium benzoate	Listed	Not listed	Not listed	Listed	Not listed	Uncontrolled product

**Section 16 Additional Information**

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure.

# SAFETY DATA SHEET

## FORMALIN FIXED GRASSFROGS AND BULLFROGS IN PRESERVED HOLDING SOLUTION



www.ranaco.com

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Formalin Fixed Grassfrogs and Bullfrogs In Preserved Holding Solution  
**Recommended Use:** Science education applications  
**Synonyms:** None  
**Manufacturer/Supplier:** Ranaco Corporation, 4345 E Irvington Road, Tucson, AZ 85714  
**General Information:** 800-528-7023  
**Transportation Emergency Number:** 800-424-9300 Chemtrec – 24 hours assistance

### SECTION 2: HAZARD IDENTIFICATION

**DANGER**



**Targeted organs:**

Eyes, Skin, Central Nervous System,  
Respiratory Tract

**GHS Classification:**

Acute Toxicity, oral (Category 4)  
Acute Toxicity, dermal (Category 4)  
Skin Irritation (Category 2)  
Eye irritation (Category 2A)  
Skin sensitization (Category 1)  
Acute toxicity, inhalation (Category 4)  
Carcinogenicity (Category 2)

**Hazard Statements:**

Maybe harmful if swallowed.  
Causes skin irritation.  
Causes eye irritation.  
May cause an allergic skin reaction.  
May cause respiratory irritation.  
May cause cancer.

Ca Prop 65: This product contains a chemical known to the State of California to cause cancer or reproductive toxicity.

**Precautionary Statements:**

Obtain special instructions before use.  
Wear protective gloves and eye protection.  
Do not eat, drink or smoke when using this product.  
Wash hands thoroughly after handling.  
IF ON SKIN: Wash with plenty of soap and water.  
IF IN EYES: Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.  
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
IF SWALLOWED: Immediately call a POISON CENTER or physician  
IF exposed or concerned: Get medical advice/attention.  
Store in a well-ventilated place. Keep container tightly closed.  
Dispose of contents/container in accordance with local/regional/national regulations.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS #	%
Formaldehyde	50-00-0	All concentrations are withheld due to Trade Secret
Methanol	67-56-1	
Propylene Glycol	57-55-6	
Ethylene Glycol Monophenyl Ether	122-99-6	
Acetone	67-64-1	
Glutaraldehyde	111-30-8	
BHT Butylated Hydroxytoluene	128-37-0	
Polysorbate 80	9005-65-6	
Water	7732-18-5	Balance



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## SECTION 4: FIRST AID MEASURES

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**SKIN CONTACT:** Wash affected area with soap and water. Seek medical attention if symptoms develop.

**EYE CONTACT:** Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Seek medical attention if irritation persists.

**INHALATION:** Remove to fresh air. Get medical treatment if symptoms persist.

**INGESTION:** Immediately call a POISON CENTER or physician. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

**SIGNS AND SYMPTOMS OF EXPOSURE:** Irritation of skin, eyes, respiratory tract. Repeated exposure may cause dermatitis or other allergic reactions.

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## SECTION 5: FIRE FIGHTING MEASURES

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**EXTINGUISHING MEDIA:** Use dry chemical, CO<sub>2</sub>, water spray (fog) or alcohol foam.

**FIRE FIGHTING METHODS AND PROTECTION:** Firefighters should wear self-contained breathing apparatus and wear full protective equipment.

**FIRE AND/OR EXPLOSION HAZARDS:** During a fire, smoke generated can be irritating or toxic.

**HAZARDOUS COMBUSTION PRODUCTS:** Products of combustion include but are not limited to carbon monoxide and carbon dioxide.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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**PERSONAL PRECAUTIONS:** Avoid breathing vapors. Use gloves and eye protection to clean up spills.

**EMERGENCY PROCEDURES:** Ventilate area of spill. Eliminate all sources of ignition. Remove non-essential personnel.

**ENVIRONMENTAL PRECAUTIONS:** No special hazards. Follow applicable federal, state, provincial and local regulations regarding releases.

**METHODS FOR CONTAINMENT AND CLEAN-UP:** Absorb with liquid binding material and place in a sealed container. Dispose of waste in accordance with federal, state, provincial and local regulations.

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## SECTION 7: HANDLING AND STORAGE

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**PRECAUTIONS FOR SAFE HANDLING:** Do not eat, drink or smoke when using this product. Avoid breathing vapors. Avoid direct skin or eye contact with liquids. Do not ingest. Wash hands with soap and water after use or handling of product.

**CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:** Store at room temperature in a dry well ventilated area. Keep specimen container tightly closed when not in use.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Formaldehyde	C 0.3 ppm / C 0.37 mg/m <sup>3</sup>	TWA: 0.75 ppm / STEL: 2ppm	TWA: 0.016 ppm / STEL: 0.1 ppm
Methanol	TWA: 200 ppm / STEL: 250 ppm	TWA: 200 ppm / STEL: 260 ppm	TWA: 200 ppm / STEL: 250 ppm
Ethylene Glycol Monophenyl Ether	Not available	Not available	Not available
Glutaraldehyde	C 0.05 ppm / C 0.2 mg/m <sup>3</sup>	Not available	C 0.2 ppm / C 0.8 mg/m <sup>3</sup>
Acetone	TWA: 250 ppm / STEL: 500 ppm	TWA: 1000 ppm	TWA: 250 ppm
BHT Butylated Hydroxytoluene	2 mg/m <sup>3</sup> Vapor	5 mg/m <sup>3</sup> Nuisance Dust	TWA 10 mg/m <sup>3</sup>
Polysorbate 80	None	None	None
	<b>WEEL</b>		
Propylene Glycol	TWA 10 mg/m <sup>3</sup> Aerosol	Not available	Not available

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility, a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles or face shield, apron and appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory Protection:** None should be needed in normal handling and room temperatures. If use conditions generate fumes above the OSHA regulations, use of a NIOSH/MSHA approved respirator is required.

ACGIH: American Conference of Industrial Hygienists, OSHA: U.S. Occupational Safety and Health Administration, NIOSH: U.S. National Institute for Occupational Safety and Health, PEL: Permissible Exposure Limit, TWA: Time Weighted Average, STEL: Short Term Exposure Limit, REL: Recommended Exposure Limit, WEEL: Workplace Environmental Exposure Limit

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## SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

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**Appearance:** Specimen with/without clear colorless liquid

**Odor:** Mild pungent or sweet odor

**Odor Threshold:** Data not available

**pH:** Data not available

**Melting/Freezing Point:** Data not available

**Boiling Point:** Data not available

**Flash Point:** Data not available

**Evaporation Rate (Water = 1) :** >1

**Flammability (solid/gas):** Data not available

**Explosion Limits: Lower/Upper:** Data not available

**Vapor Pressure (mmHg):** Data not available

**Vapor Density:** Data not available

**Relative Density (Specific Gravity):** >1

**Solubility(ies):** Complete in water

**Partition Coefficient:** Data not available

**Auto-ignition Temperature:** Data not available

**Decomposition Temperature:** Data not available

**Viscosity:** Data not available

**Molecular Formula:** Mixture

**Molecular Weight:** Mixture

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## SECTION 10: STABILITY & REACTIVITY

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**Reactivity:** None under normal conditions.

**Chemical Stability:** Stable

**Conditions to Avoid:** Excessive temperatures which cause evaporation.

**Incompatible Materials:** Strong acids, phenol, strong oxidizers, strong bases, hydrochloric acid, ammonia, iodine, alkalies, tannin, iron products, gelatin, bisulfate

**Hazardous Polymerization:** None under normal conditions.

**Hazardous Decomposition Products:** May include, but are not limited to Carbon oxides, gaseous formaldehyde, aldehydes, ketones, alcohols, ethers and organic acids

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## SECTION 11: TOXICOLOGICAL INFORMATION

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**Acute Toxicity:** Formalin Fixed Grassfrogs and Bullfrogs in Preserved Holding Solution have not been tested as a mixture. Information about individual components is supplied.

Formaldehyde – Oral-rat LD50: 100 mg/kg; Inhalation-rat LC50: 250 ppm/4 hours; Dermal-rat: 270 mg/kg

Methanol - Oral-rat LD50: 5,600 mg/kg; Inhalation-rat LC50: 6,400 ppm/4 hours, 145,000 ppm/ 1 hour; Dermal-rat: 15,800 mg/kg

Propylene Glycol – Ingestion-rat LD50: > 20,000 mg/kg, Skin absorption-rabbit LD50: > 20,000 mg/kg

Ethylene Glycol Monophenyl Ether- Oral-rat LD50: 1,840 mg/kg; Dermal-rabbit: >2,214 mg/kg

Glutaraldehyde - Oral-rat LD50:200mg/kg; Dermal-rabbit LD50: 1,749 mg/kg

Acetone - Oral-rat LD50: 5,800 mg/kg; Inhalation-rat LC50: 50,100 mg/m<sup>3</sup>; Irritation eye-rabbit: standard draize, 20 mg

BHT Butylated Hydroxytoluene - Oral-rat LD50: >2,930 mg/kg; Dermal-rat: >2,000 mg/kg

**Chronic Effects:** Data not available.

**Skin Corrosion/Irritation:**

Causes skin irritation. May cause an allergic skin reaction.

**Serious Eye Damage/Irritation:**

Causes eye irritation or damage.

**Respiratory or Skin Sensitization:**

May cause sensitization by skin contact

**Germ Cell Mutagenicity:**

Data not available.

**Carcinogenicity:** Data not available. Information about individual components is supplied.

Formaldehyde – Classified as a carcinogen by the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) and OSHA. Ca Prop 65: Formaldehyde is known to the State of California to cause cancer.

**Reproductive Toxicity:** Data not available. Information about individual components is supplied.

Formaldehyde - Ca Prop 65: Formaldehyde is known to the State of California to cause reproductive toxicity.

**Specific Target Organ Toxicity – Single exposure:** Data not available.

**Specific Target Organ Toxicity– Repeated exposure:** Data not available.

**Aspiration Hazard:** Data not available.

---

**Potential Health Effects:**

**Inhalation:** May cause respiratory irritation.

**Ingestion:** May be harmful if swallowed.

**Skin:** May cause skin irritation. May cause an allergic skin reaction.

**Eyes:** May cause eye irritation or damage.

**Signs and Symptoms of Exposure:**

The chemical, physical and toxicological properties have not been thoroughly investigated for this product/mixture. Specific data is not available. Exercise appropriate procedures to minimize hazards.

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**SECTION 12: ECOLOGICAL INFORMATION**

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**Toxicity to fish:** No data available.

**Toxicity to daphnia and other aquatic invertebrates:** No data available.

**Toxicity to algae:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulative potential:** No data available.

**Mobility in soil:** No data available.

**PBT and vPvB assessment:** No data available.

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

---

**SECTION 13: DISPOSAL CONSIDERATIONS**

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Dispose of contents/container in accordance with local/regional/national regulations.

---

**SECTION 14: TRANSPORTATION INFORMATION (US DOT / CANADA TDG)**

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**UN/NA Number:** Not applicable

**Shipping Name:** Not regulated

**Hazard Class:** Not applicable

**Packing Group:** Not applicable

**Reportable Quantity:** No

**Marine Pollutant:** No

**Exceptions:** Not applicable

**2012 ERG Guide#:** Not applicable

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**SECTION 15: REGULATORY INFORMATION**

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Toxic Substances Control Act (TSCA): All components of this product are included on the TSCA inventory.

Component	TSCA	CERLCA (RQ)	RCRA CODE	DSL	NDSL	WHMIS CLASSIFICATION
Formaldehyde	Listed	100 lbs (45.4 kg)	U122	Listed	Not Listed	D1A; D2A; D2B
Methanol	Listed	5,000 lbs (2,270 kg)	U154	Listed	Not Listed	B2; D1B; D2A; D2B
Propylene Glycol	Listed	None	None	Listed	Not Listed	None
Ethylene Glycol Monophenyl Ether	Listed	None	None	Listed	Not Listed	B3
Acetone	Listed	5,000 lbs	U002	Listed	Not Listed	B2, D2B
Glutaraldehyde	Listed	None	None	Listed	Not Listed	D1A, D2B, E
BHT Butylated Hydroxytoluene	Listed	None	None	Listed	Not Listed	None
Polysorbate 80	Listed	None	None	Listed	Not Listed	None

California Proposition 65: This product contains a chemical known to the State of California to cause cancer or reproductive toxicity.

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**SECTION 16: OTHER INFORMATION**

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**Date Prepared:** April 16, 2015

RANACO disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein. All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, RANACO makes no representations as to its accuracy or sufficiency. Conditions of use are beyond RANACO's control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling and disposal of the product or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

# SAFETY DATA SHEET

## FAA FIXED EARTHWORMS, WORMS, BOTANICALS AND OTHER SPECIMENS IN PRESERVED HOLDING SOLUTION



www.ranaco.com

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** FAA Fixed Earthworms, Worms, Botanicals And Other Specimens In Preserved Holding Solution  
**Recommended Use:** Science education applications  
**Synonyms:** None  
**Manufacturer/Supplier:** Ranaco Corporation, 4345 E Irvington Road, Tucson, AZ 85714  
**General Information:** 800-528-7023  
**Transportation Emergency Number:** 800-424-9300 Chemtrec – 24 hours assistance

### SECTION 2: HAZARD IDENTIFICATION

#### DANGER



**Targeted organs:**

Eyes, Skin, Central Nervous System,  
Respiratory Tract

**GHS Classification:**

Acute Toxicity, oral (Category 4)  
Acute Toxicity, dermal (Category 4)  
Skin Irritation (Category 2)  
Eye irritation (Category 2A)  
Skin sensitization (Category 1)  
Acute toxicity, inhalation (Category 4)  
Carcinogenicity (Category 2)

**Hazard Statements:**

Maybe harmful if swallowed.  
Causes skin irritation.  
Causes eye irritation.  
May cause an allergic skin reaction.  
May cause respiratory irritation.  
May cause cancer.

Ca Prop 65: This product contains a chemical known to the State of California to cause cancer or reproductive toxicity.

**Precautionary Statements:**

Obtain special instructions before use.  
Wear protective gloves and eye protection.  
Do not eat, drink or smoke when using this product.  
Wash hands thoroughly after handling.  
IF ON SKIN: Wash with plenty of soap and water.  
IF IN EYES: Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.  
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
IF SWALLOWED: Immediately call a POISON CENTER or physician  
IF exposed or concerned: Get medical advice/attention.  
Store in a well-ventilated place. Keep container tightly closed.  
Dispose of contents/container in accordance with local/regional/national regulations.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS #	%
Formaldehyde	50-00-0	≤ 0.1%
Methanol	67-56-1	≤ 0.03%
Propylene Glycol	57-55-6	≤ 9%
Ethylene Glycol Monophenyl Ether	122-99-6	≤ 2%
Isopropyl Alcohol	67-63-0	≤ 0.5%
Glacial Acetic Acid	64-19-7	≤ 0.05%
Water	7732-18-5	Balance

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## SECTION 4: FIRST AID MEASURES

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**SKIN CONTACT:** Wash affected area with soap and water. Seek medical attention if symptoms develop.

**EYE CONTACT:** Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Seek medical attention if irritation persists.

**INHALATION:** Remove to fresh air. Get medical treatment if symptoms persist.

**INGESTION:** Immediately call a POISON CENTER or physician. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

**SIGNS AND SYMPTOMS OF EXPOSURE:** Irritation of skin, eyes, respiratory tract. Repeated exposure may cause dermatitis or other allergic reactions.

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## SECTION 5: FIRE FIGHTING MEASURES

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**EXTINGUISHING MEDIA:** Use dry chemical, CO<sub>2</sub>, dry sand or alcohol foam.

**FIRE FIGHTING METHODS AND PROTECTION:** Firefighters should wear self-contained breathing apparatus and wear full protective equipment.

**FIRE AND/OR EXPLOSION HAZARDS:** During a fire, smoke generated can be irritating or toxic.

**HAZARDOUS COMBUSTION PRODUCTS:** Products of combustion include but are not limited to carbon monoxide and carbon dioxide.

---

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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**PERSONAL PRECAUTIONS:** Avoid breathing vapors. Use gloves and eye protection to clean up spills.

**EMERGENCY PROCEDURES:** Ventilate area of spill. Eliminate all sources of ignition. Remove non-essential personnel.

**ENVIRONMENTAL PRECAUTIONS:** No special hazards. Follow applicable federal, state, provincial and local regulations regarding releases.

**METHODS FOR CONTAINMENT AND CLEAN-UP:** Absorb with liquid binding material and place in a sealed container. Dispose of waste in accordance with federal, state, provincial and local regulations.

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## SECTION 7: HANDLING AND STORAGE

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**PRECAUTIONS FOR SAFE HANDLING:** Do not eat, drink or smoke when using this product. Avoid breathing vapors. Avoid direct skin or eye contact with liquids. Do not ingest. Wash hands with soap and water after use or handling of product.

**CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:** Store at room temperature in a dry well ventilated area. Keep specimen container tightly closed when not in use.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Exposure Limits:

Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Formaldehyde	C 0.3 ppm / C 0.37 mg/m <sup>3</sup>	TWA: 0.75 ppm / STEL: 2ppm	TWA: 0.016 ppm / STEL: 0.1 ppm
Methanol	TWA: 200 ppm / STEL: 250 ppm	TWA: 200 ppm / STEL: 260 ppm	TWA: 200 ppm / STEL: 250 ppm
Ethylene Glycol Monophenyl Ether	Not available	Not available	Not available
Isopropyl Alcohol	TWA: 200 ppm / STEL: 400 ppm	TWA 400 ppm: 980 mg/m <sup>3</sup>	TWA 400 ppm: 980 mg/m <sup>3</sup>
Glacial Acetic Acid	2 mg/m <sup>3</sup> Vapor	5 mg/m <sup>3</sup> Nuisance Dust	TWA 10 mg/m <sup>3</sup>
	<b>WEEL</b>		
Propylene Glycol	TWA 10 mg/m <sup>3</sup> Aerosol	Not available	Not available

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility, a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles or face shield, apron and appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory Protection:** None should be needed in normal handling and room temperatures. If use conditions generate fumes above the OSHA regulations, use of a NIOSH/MSHA approved respirator is required.

ACGIH: American Conference of Industrial Hygienists, OSHA: U.S. Occupational Safety and Health Administration, NIOSH: U.S. National Institute for Occupational Safety and Health, PEL: Permissible Exposure Limit, TWA: Time Weighted Average, STEL: Short Term Exposure Limit, REL: Recommended Exposure Limit, WEEL: Workplace Environmental Exposure Limit

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## SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

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**Appearance:** Specimen with/without clear colorless liquid

**Odor:** Mild odor

**Odor Threshold:** Data not available

**pH:** Data not available

**Melting/Freezing Point:** Data not available

**Boiling Point:** Data not available

**Flash Point:** Data not available

**Evaporation Rate (Water = 1) :** >1

**Flammability (solid/gas):** Data not available

**Explosion Limits: Lower/Upper:** Data not available

**Vapor Pressure (mmHg):** Data not available

**Vapor Density:** Data not available

**Relative Density (Specific Gravity):** >1

**Solubility(ies):** Complete in water

**Partition Coefficient:** Data not available

**Auto-ignition Temperature:** Data not available

**Decomposition Temperature:** Data not available

**Viscosity:** Data not available

**Molecular Formula:** Mixture

**Molecular Weight:** Mixture

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## SECTION 10: STABILITY & REACTIVITY

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**Reactivity:** None under normal conditions.

**Chemical Stability:** Stable

**Conditions to Avoid:** Excessive temperatures, heat and sources ignition

**Incompatible Materials:** Inorganic acids, strong oxidizers, and halogens

**Hazardous Polymerization:** None under normal conditions.

**Hazardous Decomposition Products:** May include, but are not limited to Carbon oxides

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## SECTION 11: TOXICOLOGICAL INFORMATION

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**Acute Toxicity:** FAA Fixed Specimens in Preserved Holding Solution have not been tested as a mixture. Information about individual components is supplied.

Formaldehyde – Oral-rat LD50: 100 mg/kg; Inhalation-rat LC50: 250 ppm/4 hour; Dermal-rat: 270 mg/kg

Methanol - Oral-rat LD50: 5,600 mg/kg; Inhalation-rat LC50: 6,400 ppm/4 hours, 145,000 ppm/ 1 hour; Dermal-rat: 15,800 mg/kg

Propylene Glycol – Ingestion-rat LD50: > 20,000 mg/kg; Skin absorption-rabbit LD50: > 20,000 mg/kg

Ethylene Glycol Monophenyl Ether- Oral-rat LD50: 1,840 mg/kg; Dermal-rabbit: >2,214 mg/kg

Isopropyl Alcohol - Oral-rat LD50:5,000mg/kg; Dermal-rabbit LD50: 12,800 mg/kg; Inhalation-rat LC50: 16,000 ppm; Irritation eye-rabbit: standard draize, 10 mg

Glacial Acetic Acid - Oral-rat LD50: 3,310 mg/kg; Dermal-rabbit LD50: 1.06 g/kg; Inhalation-mouse LC50: 5,620 ppm/1-hr

**Chronic Effects:** Data not available.

**Skin Corrosion/Irritation:**

Causes skin irritation. May cause an allergic skin reaction.

**Serious Eye Damage/Irritation:**

Causes eye irritation or damage.

**Respiratory or Skin Sensitization:**

May cause sensitization by skin contact

**Germ Cell Mutagenicity:**

Data not available.

**Carcinogenicity:** Data not available. Information about individual components is supplied.

Formaldehyde – Classified as a carcinogen by the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) and OSHA. Ca Prop 65: Formaldehyde is known to the State of California to cause cancer .

**Reproductive Toxicity:** Data not available. Information about individual components is supplied.

Formaldehyde - Ca Prop 65: Formaldehyde is known to the State of California to cause reproductive toxicity.

**Specific Target Organ Toxicity – Single exposure:** Data not available.

**Specific Target Organ Toxicity– Repeated exposure:** Data not available.

**Aspiration Hazard:** Data not available.

---

**Potential Health Effects:**

**Inhalation:** May cause respiratory irritation.

**Ingestion:** May be harmful if swallowed.

**Skin:** May cause skin irritation. May cause an allergic skin reaction.

**Eyes:** May cause eye irritation or damage.

**Signs and Symptoms of Exposure:**

The chemical, physical and toxicological properties have not been thoroughly investigated for this product/mixture. Specific data is not available. Exercise appropriate procedures to minimize hazards.

**SECTION 12: ECOLOGICAL INFORMATION**

**Toxicity to fish:** No data available.

**Toxicity to daphnia and other aquatic invertebrates:** No data available.

**Toxicity to algae:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulative potential:** No data available.

**Mobility in soil:** No data available.

**PBT and vPvB assessment:** No data available.

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

**SECTION 13: DISPOSAL CONSIDERATIONS**

Dispose of contents/container in accordance with local/regional/national regulations.

**SECTION 14: TRANSPORTATION INFORMATION (US DOT /CANADA TDG)**

**UN/NA Number:** Not applicable

**Shipping Name:** Not regulated

**Hazard Class:** Not applicable

**Packing Group:** Not applicable

**Reportable Quantity:** No

**Marine Pollutant:** No

**Exceptions:** Not applicable

**2012 ERG Guide#:** Not applicable

**SECTION 15: REGULATORY INFORMATION**

Toxic Substances Control Act (TSCA): All components of this product are included on the TSCA inventory.

Component	TSCA	CERLCA (RQ)	RCRA CODE	DSL	NDSL	WHMIS CLASSIFICATION
Formaldehyde	Listed	100 lbs (45.4 kg)	U122	Listed	Not Listed	D1A; D2A; D2B
Methanol	Listed	5,000 lbs (2,270 kg)	U154	Listed	Not Listed	B2; D1B; D2A; D2B
Propylene Glycol	Listed	None	None	Listed	Not Listed	None
Ethylene Glycol Monophenyl Ether	Listed	None	None	Listed	Not Listed	B3
Isopropyl Alcohol	Listed	None	None	Listed	Not Listed	B2, D2B
Glacial Acetic Acid	Listed	5,000 lbs (2,270 kg)	None	Listed	Not Listed	B3, E

California Proposition 65: This product contains a chemical known to the State of California to cause cancer or reproductive toxicity.

**SECTION 16: OTHER INFORMATION**

**Date Prepared:** April 16, 2015

**RANACO** disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein. All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, **RANACO** makes no representations as to its accuracy or sufficiency. Conditions of use are beyond **RANACO**'s control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling and disposal of the product or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

**Section 1 Chemical Product and Company Information****HOME SCIENCE TOOLS**

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Billings, MT 59102  
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**CHEMTREC 24 Hour Emergency**  
**Phone Number (800) 424-9300**  
For laboratory use only.  
Not for drug, food or household use.

<b>Product</b>	<b>BIURET TEST REAGENT (for protein test)</b>
<b>Synonyms</b>	Biuret Reagent Solution / Biuret Reagent / Biuret Solution

**Section 2 Hazards Identification****Signal word:** DANGER**Pictograms:** GHS05**Target organs:** Respiratory tract, gastrointestinal tract, eyes, skin.

**GHS Classification:**  
Skin. Corr. (Category 1A)

**GHS Label information: Hazard statement:**  
H314: Causes severe skin burns and eye damage.

**Precautionary statement:**

P260: Do not breathe mist/vapours/spray.  
P264: Wash hands thoroughly after handling.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P310: Immediately call a POISON CENTER or doctor/physician.  
P363: Wash contaminated clothing before reuse.  
P405: Store locked up.  
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with all local, state and federal regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**Section 3 Composition / Information on Ingredients**

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	90.38%	231-791-2
Sodium hydroxide	1310-73-2	6.42%	215-185-5
Potassium sodium tartrate	6381-59-5	1.65%	206-156-8
Cupric sulfate, pentahydrate	7758-99-8	1.18%	231-847-6
Potassium iodide	7681-11-0	0.35%	231-659-4
Ethylenediaminetetraacetic acid	6381-92-6	0.02%	None assigned.

**Section 4 First Aid Measures**

**INGESTION:** MAY BE FATAL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** CAUSES SEVERE DAMAGE. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** CAUSES SEVERE BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

**Section 5 Fire Fighting Measures**

**Suitable Extinguishing Media:** Dry chemical, water spray, alcohol foam. Can react with carbon dioxide to form sodium carbonate.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume. Contact with metals can generate hydrogen gas.

**Section 6 Accidental Release Measures**

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.



**Section 7 Handling & Storage**

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, well-ventilated area away from incompatible substances.

**Section 8 Exposure Controls / Personal Protection**

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Sodium hydroxide	STEL: C 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	STEL: C 2 mg/m <sup>3</sup>

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

**Section 9 Physical & Chemical Properties**

<b>Appearance:</b> Clear, colorless liquid. <b>Odor:</b> No odor. <b>Odor threshold:</b> Not applicable. <b>pH:</b> Data not available. <b>Melting / Freezing point:</b> ~ 0°C (~ 32°F) [water] <b>Boiling point:</b> ~ 100°C (212°F) [water] <b>Flash point:</b> Not flammable.	<b>Evaporation rate ( Water = 1):</b> < 1 <b>Flammability (solid/gas):</b> Not applicable. <b>Explosion limits: Lower / Upper:</b> Not applicable <b>Vapor pressure (mm Hg):</b> 14 [water] <b>Vapor density (Air = 1):</b> 0.7 [water] <b>Relative density (Specific gravity):</b> 1.0 [water] <b>Solubility(ies):</b> Complete in water.	<b>Partition coefficient: (n-octanol / water):</b> Not applicable <b>Auto-ignition temperature:</b> Not applicable <b>Decomposition temperature:</b> Data not available. <b>Viscosity:</b> Data not available. <b>Molecular formula:</b> Mixture <b>Molecular weight:</b> Mixture
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**Section 10 Stability & Reactivity**

**Chemical stability:** Stable  
**Hazardous polymerization:** Will not occur.  
**Conditions to avoid:** Can react with carbon dioxide to form sodium carbonate.  
**Incompatible materials:** Metals, acids, organic compounds, organic nitro compounds.  
**Hazardous decomposition products:** Sodium oxide. Reacts with metals to form flammable and explosive hydrogen gas.

**Section 11 Toxicological Information**

**Acute toxicity:** Data not available  
**Skin corrosion/irritation:** Skin - rabbit - Causes severe burns. - 24 h [Sodium hydroxide]  
**Serious eye damage/irritation:** Eyes - rabbit - Severe eye irritation - 24 h [Sodium hydroxide]  
**Respiratory or skin sensitization:** Data not available  
**Germ cell mutagenicity:** Data not available  
**Carcinogenicity:** Data not available  
 NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.  
 IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.  
 OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.  
**Reproductive toxicity:** Data not available  
**STOT-single exposure:** Data not available  
**STOT-repeated exposure:** Data not available  
**Aspiration hazard:** Data not available  
**Potential health effects:**  
 Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.  
 Ingestion: May be harmful if swallowed.  
 Skin: May be harmful if absorbed through skin. Causes skin burns.  
 Eyes: Causes eye burns. Causes severe eye burns.  
**Signs and symptoms of exposure:** Spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.  
**Additional information: RTECS #:** WB4900000 [Sodium hydroxide]

**Section 12 Ecological Information**

**Toxicity to fish:** LC50 - Gambusia affinis (Mosquito fish) - 125 mg/l - 96 h [Sodium hydroxide]  
**Toxicity to daphnia and other aquatic invertebrates:** Immobilization EC50 - Daphnia - 40.38 mg/l - 48 h [Sodium hydroxide]  
**Toxicity to algae:** No data available  
**Persistence and degradability:** No data available  
**Bioaccumulative potential:** No data available  
**Mobility in soil:** No data available  
**PBT and vPvB assessment:** No data available  
**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

**Section 13 Disposal Considerations**


These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

**Section 14 Transport Information**

**UN/NA number:** UN1824      **Shipping name:** Sodium hydroxide solution  
**Hazard class:** 8      **Packing group:** II      **Reportable Quantity:** 1,000 lbs (454 kg)      **Marine pollutant:** No  
**Exceptions:** Limited quantity equal to or less than 1 L      **2012 ERG Guide #** 154

**Section 15 Regulatory Information**

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Sodium hydroxide	Listed	1,000 lbs (454 kg)	D002	Listed	Not listed	 E

**Section 16 Additional Information**

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

## Section 1 Chemical Product and Company Information

Page E1 of E2

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For laboratory use only.  
Not for drug, food or household use.

<b>Product</b>	ETHYL ACETATE
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<b>Synonyms</b>	Ethyl Acetic Ester
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## Section 2 Hazards Identification

**Signal word:** DANGER**Pictograms:** GHS02 / GHS07**Target organs:** Central nervous system, Liver, Kidneys.**GHS Classification:**

Flammable liquid (Category 2)

Eye irritation (Category 2B)

STOT-SE (Category 3)

**GHS Label information: Hazard statement:**

H225: Highly flammable liquid and vapour.

H319: Causes serious eye irritation.

H336: May cause drowsiness or dizziness.

**Precautionary statement:**

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P241: Use explosion-proof electrical/ventilating/lighting equipment.

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P264: Wash hands thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312: Call a POISON CENTER or doctor if you feel unwell.

P337+P313: If eye irritation persists: Get medical attention.

P370+P378: In case of fire: Use dry chemical, alcohol foam, carbon dioxide or water spray to extinguish.

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P235: Keep cool.

P405: Store locked up.

P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

## Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Ethyl acetate	141-78-6	99%	205-500-4

## Section 4 First Aid Measures

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** CAUSES SKIN IRRITATION AND/OR DRYNESS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire Fighting Measures

**Suitable Extinguishing Media:** Use any media suitable for extinguishing supporting fire.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instantly.

## Section 6 Accidental Release Measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, well-ventilated area away from incompatible substances. Keep away from ignition sources.

## Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Ethyl acetate	TWA: 400 ppm / 1440 mg/m <sup>3</sup>	TWA: 400 ppm / 1440 mg/m <sup>3</sup>	TWA: 400 ppm / 1440 mg/m <sup>3</sup>

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical &amp; Chemical Properties

**Appearance:** Clear, colorless liquid.

**Odor:** Fruity odor.

**Odor threshold:** Data not available.

**pH:** 7.0

**Melting / Freezing point:** -83.6°C (-118°F)

**Boiling point:** 77°C (170°F)

**Flash point:** -4.4°C (24.1°F) CC

**Evaporation rate ( = 1):** Data not available

**Flammability (solid/gas):** Data not available.

**Explosion limits: Lower / Upper:** 2.2% / 11.5%

**Vapor pressure (mm Hg):** 76 @ 20°C

**Vapor density (Air = 1):** 3.04

**Relative density (Specific gravity):** 0.902 g/cm<sup>3</sup>

**Solubility(ies):** Slightly in water.

**Partition coefficient:** Data not available

**Auto-ignition temperature:** 427°C (800°F)

**Decomposition temperature:** Data not available.

**Viscosity:** 0.48 cSt

**Molecular formula:** CH<sub>3</sub>COOC<sub>2</sub>H<sub>5</sub>

**Molecular weight:** 88.11

## Section 10 Stability &amp; Reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures, heat, sparks, open flame and other sources of ignition.

**Incompatible materials:** Strong oxidizers, inorganic acids and halogens.

**Hazardous decomposition products:** Oxides of carbon.

## Section 11 Toxicological Information

**Acute toxicity:** Oral-rat LD50: 5620 mg/kg; Inhalation-rat LC50: 200 g/m<sup>3</sup>; Dermal-rabbit LD50: >20 ml/kg

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: Inhalation may cause respiratory tract irritation.

Ingestion: Ingestion causes may cause nausea, central nervous system depression, weakness, drowsiness, loss of consciousness.

Skin: Contact with skin causes irritation defatting on prolonged contact.

Eyes: Contact with eyes may cause irritation, redness, corneal injury.

**Signs and symptoms of exposure:** To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

**Additional information:** RTECS #: AH5425000

## Section 12 Ecological Information

**Toxicity to fish:** Pimephales promelas (fish, fresh water), LC50 = 230 mg/L/96 hours

**Toxicity to daphnia and other aquatic invertebrates:** Daphnia magna (Crustacea), EC50 = 717 mg/L/48 hours

**Toxicity to algae:** Scenedesmus subspicatus (Algae), EC50 = 3300 mg/L/48 hours

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport Information (US DOT / CANADA TDG)

**UN/NA number:** UN1173

**Shipping name:** Ethyl acetate

**Hazard class:** 3

**Packing group:** II

**Reportable Quantity:** 5,000 lbs (2270 kg)


**Marine pollutant:** No

**Exceptions:** Limited quantity equal to or less than 1 L

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## Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Ethyl acetate	Listed	Not listed	U112	Listed	Not listed	 B2

## Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.