Methylene Blue Staining Solution

Section 1  Product Description

Product Name: Methylene Blue Staining Solution  
Recommended Use: Science education applications  
Synonyms: Methylene Blue Stain  
Distributor: Carolina Biological Supply Company  
2700 York Road, Burlington, NC 27215  
1-800-227-1150  
Chemical Information: 800-227-1150 (8am-5pm (ET) M-F)  
Chemtrec: 800-424-9300 (Transportation Spill Response 24 hours)

Section 2  Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

WARNING

Flammable liquid and vapor. May cause damage to organs.

GHS Classification: Flammable Liquid Category 3

Other Safety Precautions: IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

Acute Toxicity Oral Contains 21.72375 % of the mixture consists of ingredient(s) of unknown toxicity
Acute Toxicity Dermal Contains 21.72375 % of the mixture consists of ingredient(s) of unknown toxicity
Acute Toxicity Inhalation Vapor Contains 21.72375 % of the mixture consists of ingredient(s) of unknown toxicity
Acute Toxicity Inhalation Dust/Mist Contains 21.72375 % of the mixture consists of ingredient(s) of unknown toxicity

Section 3  Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>76.02</td>
</tr>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>21.49</td>
</tr>
<tr>
<td>2-Propanol</td>
<td>67-63-0</td>
<td>1.19</td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>1.07</td>
</tr>
<tr>
<td>Methylene Blue Chloride</td>
<td>61-73-4</td>
<td>0.23</td>
</tr>
</tbody>
</table>

Section 4  First Aid Measures

Emergency and First Aid Procedures

Inhalation: In case of accident by inhalation: remove casualty to fresh air and keep at rest.
Eyes: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact: After contact with skin, wash immediately with plenty of water.
Ingestion: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Section 5  Firefighting Procedures

Extinguishing Media: Use media suitable to extinguish surrounding fire.
Fire Fighting Methods and Protection: Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.

Fire and/or Explosion Hazards: Fire or excessive heat may produce hazardous decomposition products. Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

### Section 6 Spill or Leak Procedures

Steps to Take in Case Material Is Released or Spilled: No health affects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section 8 of this (M)SDS. Ventilate the contaminated area. Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

### Section 7 Handling and Storage

Handling: Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/…/ equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do no eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.

Storage: Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up. Keep container tightly closed in a cool, well-ventilated place.

Storage Code: Green - general chemical storage

### Section 8 Protection Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(TWA)</td>
<td>(STEL)</td>
</tr>
<tr>
<td>Ethanol</td>
<td>N/A</td>
<td>1000 ppm STEL</td>
</tr>
<tr>
<td>2-Propanol</td>
<td>200 ppm TWA</td>
<td>400 ppm STEL</td>
</tr>
<tr>
<td>Methanol</td>
<td>200 ppm TWA</td>
<td>250 ppm STEL</td>
</tr>
<tr>
<td>Methylene Blue Chloride</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Control Parameters**

**Engineering Measures:** No exposure limits exist for the constituents of this product. General room ventilation might be required to maintain operator comfort under normal conditions of use.

**Personal Protective Equipment (PPE):** Lab coat, apron, eye wash, safety shower.

**Respiratory Protection:** No respiratory protection required under normal conditions of use.

**Respirator Type(s):** None required where adequate ventilation is provided. If airborne concentrations are above the applicable exposure limits, use NIOSH/MSHA approved respiratory protection.

**Eye Protection:** Wear chemical splash goggles when handling this product. Have an eye wash station available.

**Skin Protection:** Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

**Gloves:** Nitrile

### Section 9 Physical Data

**Formula:** See Section 3

**Molecular Weight:** No data available

**Appearance:** Colorless Blue Liquid

**Odor:** Mild Alcohol Odor

**Odor Threshold:** No data available

**pH:** No data available

**Melting Point:** -114 C

**Boiling Point:** No data available

**Flash Point:** No data available

**Flammable Limits in Air:** No data available

**Vapor Pressure:** No data available

**Evaporation Rate (BuAc=1):** No data available

**Vapor Density (Air=1):** No data available

**Specific Gravity:** < 1

**Solubility in Water:** Soluble

**Log Pow (calculated):** No data available

**Autoignition Temperature:** No data available

**Decomposition Temperature:** No data available

**Viscosity:** No data available

**Percent Volatile by Volume:** No data available
## Section 10  Reactivity Data

**Reactivity:** Not generally reactive under normal conditions.

**Chemical Stability:** Stable under normal conditions.

**Conditions to Avoid:** Temperatures above flash point in combination with sparks, open flames, or other sources of ignition.

**Incompatible Materials:** Water-reactive materials, Organic Peroxides, Strong acids, Oxidizing materials

**Hazardous Polymerization:** Will not occur

## Section 11  Toxicity Data

### Routes of Entry
- Inhalation and ingestion.

### Symptoms (Acute):
- Respiratory Irritation, Dermatitis, Central Nervous System Depression, Dizziness, Respiratory disorders, Eye disorders

### Delayed Effects:
- No data available

### Acute Toxicity:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>Oral LD50 Rat 90000 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Propanol</td>
<td>67-63-0</td>
<td>Oral LD50 Rat 5045 mg/kg</td>
<td>Oral LD50 Mouse 3600 mg/kg</td>
<td>INHALATION LC50 Rat 16000 ppm</td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>Oral LD50 Mouse 7300 mg/kg</td>
<td></td>
<td>INHALATION LC50 Rat 64000 ppm</td>
</tr>
<tr>
<td>Methylene Blue Chloride</td>
<td>61-73-4</td>
<td>Oral LD50 Rat 1180 mg/kg</td>
<td>Oral LD50 Mouse 3500 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

### Carcinogenicity:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
</tr>
<tr>
<td>2-Propanol</td>
<td>67-63-0</td>
<td>Listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Methylene Blue Chloride</td>
<td>61-73-4</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

### Chronic Effects:
- Mutagenicity: No evidence of a mutagenic effect.
- Teratogenicity: No evidence of a teratogenic effect (birth defect).
- Sensitization: No evidence of a sensitization effect.
- Reproductive: No evidence of negative reproductive effects.

### Target Organ Effects:
- **Acute:** Central Nervous System, Eyes, Blood
- **Chronic:** Eyes, Blood

## Section 12  Ecological Data

### Overview:
- This material is not expected to be harmful to the ecology.

### Mobility:
- No data

### Persistence:
- Biodegradation, Adsorbs to soil.

### Bioaccumulation:
- No data

### Degradability:
- No data

### Other Adverse Effects:
- No data

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Eco Toxicity</th>
</tr>
</thead>
</table>

Methylene Blue Staining Solution
Safety Data Sheet

**Section 13** Disposal Information

**Disposal Methods:** Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.

**Waste Disposal Code(s):** Not Determined

**Section 14** Transport Information

**Ground - DOT Proper Shipping Name:** Not regulated for transport by US DOT.

**Air - IATA Proper Shipping Name:** Not regulated for air transport by IATA.

**Section 15** Regulatory Information

**TSCA Status:** All components in this product are on the TSCA Inventory.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>§ 313 Name</th>
<th>§ 304 RQ</th>
<th>CERCLA RQ</th>
<th>§ 302 TPQ</th>
<th>CAA 112(2) TQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2-Propanol</td>
<td>67-63-0</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Methanol</td>
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<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Methylene Blue Chloride</td>
<td>61-73-4</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**California Prop 65:** WARNING: This product contains a chemical known to the state of California to cause cancer, birth defects or other reproductive harm.

**Section 16** Additional Information

**Revised:** 09/09/2015  
**Replaces:** 02/06/2015  
**Printed:** 10-29-2015

The information provided in this (Material) Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the (Material) Safety Data Sheet.

**Glossary**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Governmental Industrial Hygienists</td>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstract Service Number</td>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation, and Liability Act</td>
<td>PEL</td>
<td>Permissible Exposure Limit</td>
</tr>
<tr>
<td>DOT</td>
<td>U.S. Department of Transportation</td>
<td>ppm</td>
<td>Parts per million</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
</tr>
<tr>
<td>N/A</td>
<td>Not Available</td>
<td>SARA</td>
<td>Superfund Amendments and Reauthorization Act</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TLV</td>
<td>Threshold Limit Value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TSCA</td>
<td>Toxic Substances Control Act</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IDLH</td>
<td>Immediately dangerous to life and health</td>
</tr>
</tbody>
</table>