

## **MATERIAL SAFETY DATA SHEET**

METHYLENE BLUE STAINING SOL.  
CAROLINA BIOLOGICAL

Revised: 09/12/07  
Replaces: 07/10/07  
Printed: 05/20/08

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### **1. PRODUCT DESCRIPTION**

Product Name: Methylene Blue Staining Solution  
Product Code(s): 87-5911, 87-5913, 87-5915  
Size: 25ml, 120ml, 500ml  
Chemical Name: N/A  
CAS Number: See section 2 for individual components  
Formula: See section 2  
Synonyms: none  
Distributor: Carolina Biological Supply Company  
2700 York Road  
Burlington, NC 27215

Chemical Information: 800-227-1150 (8am-5pm (ET) M-F)  
Chemtrec (Transportation Spill Response 24 hours): 800-424-9300

### **2. COMPOSITION/INFORMATION ON INGREDIENTS**

Principal Hazardous Components:

Methylene Blue (CAS#61-73-4) - 0.23%  
Ethyl Alcohol (CAS#64-17-5) - 21.27%  
Methyl isobutyl ketone (CAS#108-10-1) - 1.4%  
Hexane (CAS#110-54-3) - 0.35%

TLV and PEL units:

Methylene Blue: No ACGIH-TLV or OSHA-PEL data available  
Ethyl alcohol ACGIH-TLV 1,000 ppm (TWA); OSHA-PEL 1,000 ppm (TWA).  
Methyl isobutyl ketone: ACGIH-TLV 50 ppm (TWA), 75 ppm (STEL);  
OSHA-PEL 100 ppm (TWA)  
Hexane: ACGIH-TLV- 50 ppm (TWA); OSHA-PEL- 500 ppm (TWA).

### **3. HAZARD IDENTIFICATION**

Emergency Overview: Not expected to be a health hazard under normal conditions of use.

Potential Health Effects:

Eyes: May cause irritation.  
Skin: May cause irritation.  
Ingestion: May cause gastrointestinal discomfort.  
Inhalation: May cause irritation to respiratory tract.

### **4. FIRST AID MEASURES**

Emergency and First Aid Procedures:

Eyes - Flush with water for at least 15 minutes, raising and lowering eyelids occasionally. Get medical attention if irritation persists.  
Skin - Thoroughly wash exposed area for at least 15 minutes. Remove contaminated clothing. Launder contaminated clothing before reuse. Get medical attention if irritation persists.  
Ingestion - If swallowed, if conscious, give plenty of water. Immediately call a physician or poison control center. Never give anything by mouth to an unconscious person.  
Inhalation - Remove to fresh air. Give oxygen if breathing is difficult; give artificial respiration if breathing has stopped. Keep person warm and quiet, and get medical attention.

### **5. FIREFIGHTING PROCEDURES**

Flash Point(Method Used): 55.6F  
NFPA Rating: Health: 1  
Flammability: 2  
Reactivity: 1

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### Extinguisher Media:

Use media suitable to extinguish surrounding fire.

Flammable Limits in Air % by Volume: Ethyl alcohol: LEL- 3.3%, UEL- 19%

Autoignition Temperature: 793F

### Special Firefighting Procedures:

Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: None

## **6. SPILL OR LEAK PROCEDURES**

Steps to be Taken in Case Material is Released or Spilled:

Ventilate area of spill. Eliminate all sources of ignition.

Remove all non-essential personnel from area. Clean-up personnel should wear proper protective equipment and clothing. Absorb material with suitable absorbent and containerize for disposal.

## **7. SPECIAL PRECAUTIONS**

Precautions to be Taken in Handling or Storing: This material should be kept in an area suitable for the storage of flammable liquids. Bond and ground containers when transferring liquids.

Other Precautions: Keep oxidizing materials and strong acids away.

Wear splash-proof safety goggles and rubber gloves at all times during clean up process.

## **8. SPECIAL PROTECTION INFORMATION**

Respiratory Protection(Specify Type):

A NIOSH/MSHA chemical cartridge respirator should be worn if PEL or TLV is exceeded.

Ventilation:

Local Exhaust: yes

Mechanical(General): yes

Special: not generally needed

Other: no

Protective Gloves:

Rubber, neoprene, PVC, or equivalent.

Eye Protection:

Splash proof chemical safety goggles should be worn at all times.

Other Protective Clothing or Equipment:

Lab apron, eye wash, and safety shower.

## **9. PHYSICAL DATA**

Molecular Weight: N/A

Melting Point: No data available

Boiling Point: No data available

Vapor Pressure: No data available

Vapor Density(Air=1): No data available

Specific Gravity(H2O=1): No data available

Percent Volatile by Volume: No data available

Evaporation Rate(H2O=1): No data available

Solubility in Water: complete

Appearance and Odor: Opaque blue liquid with a characteristic odor of ethyl alcohol.

## **10. REACTIVITY DATA**

Stability: Stable

Conditions to Avoid: Heat, sparks, and open flame

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Incompatibility(Materials to Avoid): Oxidizing materials, acids, causticalkali, dichromates, alkali iodides, reducing agents  
Hazardous Decomposition Products: Carbon dioxide, carbon monoxide  
Hazardous Polymerization: Will not occur

### 11. TOXICITY DATA

Toxicity Data: Methylene Blue: orl-rat LD50: 1180 mg/kg  
Ethyl alcohol: orl-rat LD50: 7,060 mg/kg;  
ihl-rat LC50: 20,000 ppm/10H  
Methyl isobutyl ketone: orl-rat LD50 2,080 mg/kg;  
ihl-rat LC50 8.2 mg/L/4H.  
Hexane: orl-rat LD50 28,710 mg/kg.

Effects of Overexposure:

Acute: See section 3

Chronic:

Methylene Blue: Mutation and reproductive effects cited. Not listed as causing cancer.

Ethyl alcohol: Mutation and reproductive and tumorigenic data cited. Not listed as causing cancer.

Conditions Aggravated by Overexposure: No data available

Target Organs: No data available

Primary Route(s) of Entry: none expected

### 12. ECOLOGICAL DATA

EPA Waste Numbers: U161

### 13. DISPOSAL INFORMATION

Waste Disposal Methods: Dispose in accordance with all applicable Federal, State and Local regulations.

Always contact a permitted waste disposer (TSD) to assure compliance.

### 14. TRANSPORT INFORMATION

Description: Flammable Liquid, n.o.s. (Ethyl alcohol, Methyl isobutyl ketone), 3, UN1993, II

### 15. REGULATORY INFORMATION

EPA TSCA Status: On TSCA Inventory

Hazard Category for SARA Section 311/312 Reporting: Acute, Fire

Product or Components	SARA EHS Sec. 302 TPQ	SARA Sec. 313 Chemicals		CERCLA Sec. 103 RQ lbs.	RCRA Sec. 261.33
		Name List	Chemical Category		
Methylene Blue	No	No	No	No	No
Ethyl alcohol	No	No	No	No	No
Methyl isobutyl ketone	No	Yes	No	5000	Yes
Hexane	No	No	No	No	No

### 16. ADDITIONAL INFORMATION

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. Any employer must

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carefully assess the applicability of any information contained herein in regards to the particular use to which the employer puts the material.

### Glossary

ACGIH.....American Conference of Governmental Industrial Hygienists  
CAS Number..Chemical Abstracts Service Number  
CERCLA.....Comprehensive Environmental Response, Compensation, and Liability Act  
DOT.....U.S. Department of Transportation  
IARC.....International Agency of Research on Cancer  
mppcf.....million particles per cubic foot  
N/A.....Not Available  
NTP.....National Toxicology Program  
OSHA.....Occupational Safety and Health Administration  
PEL.....Permissible Exposure Limit  
ppm.....parts per million  
RCRA.....Resource Conservation and Recovery Act  
SARA.....Superfund Amendments and Reauthorization Act  
TLV.....Threshold Limit Value  
TSCA.....Toxic Substances Control Act