

# MATERIAL SAFETY DATA SHEET



Conforms to 93/112/EC and ISO 11014-1

## 1. Chemical Product and Company Identification

**Product Name:** Methylene Blue

**Product Number:** HS-525

**Chemical Names/**

Basic Blue 9; Methelyne blue trihydrate;

**Description:**

3,7-Bis(dimethylamino)phenazathionium chloride trihydrate

**Manufacturer**

National Diagnostics  
305 Patton Drive  
Atlanta, GA 30336

**Telephone Numbers**

(800) 526-3867  
(404) 699-2121

**Emergency Numbers**

**Chemtrec**

**(800) 424-9300 (U.S. & Canada)**

**01-703-527-3887 (outside U.S. & Canada)**

## 2. Composition/Information on Ingredients

Component	% Comp.	CAS #	EINECS #	TLV (Units)
METHYLENE BLUE	>95	61-73-4	200-515-2	none established

## EEC LABEL SYMBOL AND CLASSIFICATION



HARMFUL

**R: 22**

**Harmful if swallowed.**

**S: 22-24/25**

**Do not breathe dust. Avoid contact with skin and eyes.**

## 3. Hazards Identification

**Appearance and Odor**

Dark green powder that is odorless.

**EMERGENCY OVERVIEW - IMMEDIATE HAZARD**

MAY BE HARMFUL IF SWALLOWED.

**EMERGENCY OVERVIEW - CHRONIC HAZARD WARNING:**

LABORATORY EXPERIMENTS HAVE SHOWN MUTAGENIC EFFECTS.

## **Potential Health Effects**

### **Inhalation**

May cause methemoglobinemia, cyanosis, convulsions, tachycardia, dyspnea, and death. Can produce delayed pulmonary edema.

### **Ingestion**

A burning sensation of the mouth may be noted following ingestion. May cause nausea, vomiting, diarrhea, and gastritis.

### **Skin**

Absorption into the body may cause cyanosis. May color the skin a bluish color. May cause photosensitization.

### **Eyes**

May cause chemical conjunctivitis.

## **Signs and Symptoms of Overexposure**

### **Inhalation**

Causes respiratory tract irritation.

### **Ingestion**

Nausea, vomiting, diarrhea, and gastritis.

### **Skin**

Causes skin irritation.

### **Eyes**

Causes eye irritation and possible injury.

## **Carcinogenicity**

Not listed as a known or possible carcinogen by ACGIH, NIOSH, OSHA, NTP or IARC.

## **Mutagenicity**

DNA Adduct: Mouse, Ascites tumor = 70 umol/L.; DNA Adduct: Mammal - species unspecified  
Lymphocyte = 1830 nmol/L.

## **Reproductive Toxicity**

Oral, rat: TDLo = 2500 mg/kg (femal 1-22 day (s) after conception) Fertility - post - implantation mortality

## **Teratogenic Effects**

No information found.

## **Routes of Entry**

Ingestion, inhalation, skin contact.

## **Target Organ Statement**

Acute or chronic overexposure to this material or its components may cause adverse effects to the following: lungs, thorax, or blood.

## **4. First Aid Measures**

### **Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

### **Ingestion**

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

### **Skin**

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

### **Eyes**

Immediately flush eyes with plenty of water for at least fifteen minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

## 5. Fire Fighting Measures

Flash Point	N.A.	Flammable Limits	N.A.
Flash Point Method	N.A.	Autoignition temperature	N.A.

### Extinguishing media

Water spray, dry chemical, alcohol-resistant foam, or carbon dioxide.

### Protective Equipment

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

### Hazardous Combustion Products

Highly toxic gases may be involved in fires of this product.

### Unusual Fire and Explosion Hazards

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

NFPA Codes: Health 1 Flammability 0 Reactivity 0

## 6. Accidental Release Measures

### Steps to be taken in case material is released or spilled

Use a vacuum cleaner equipped with charcoal exhaust scrubber or hose from mechanical exhaust ventilation system to vacuum spills. If this is not possible, sweep up spills and place in a covered waste disposal container. Flush area with water.

### Waste Disposal Method

Disposal must be made in accordance with applicable federal, state, and local regulations.

### Personal Precautions

Wear appropriate protective equipment as specified in section 8.

## 7. Handling and Storage

### Handling

Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

### Storage

Keep in a tightly closed container, stored in a cooled, dry, ventilated area away from sources of heat or ignition. Protect from physical damage. Isolate from incompatible materials (section 10).

### Storage Temperature

20C

### Disposal

Observe all national, state, and local regulations regarding disposal.

## 8. Exposure Controls/Personal Protection

### Airborne Exposure Limits

Component: METHYLENE BLUE

ACGIH Threshold Limit Value (TLV): none established  
OSHA Permissible Exposure Limit (PEL): none established

### Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

### Respiratory Protection

For conditions of use where exposure to the dust or mist is apparent, a full-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

### Eye Protection

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

### Skin Protection

Wear protective gloves and clean body covering clothing.

### Other Control Measures

## 9. Physical Properties

<b>Boiling point</b>	Decomposes	<b>Evaporation Rate</b>	N.A.
<b>Melting point</b>	221F (105C)	<b>Solubility in water</b>	Soluble
<b>Vapor pressure (mmHg)</b>	Negligible	<b>pH</b>	Basic
<b>Vapor density (Air = 1)</b>	13	<b>Specific gravity (H<sub>2</sub>O = 1)</b>	1.230
<b>% volatile by volume</b>	0		

## 10. Stability and Reactivity

### Stability

Stable under ordinary conditions of use and storage.

### Conditions to Avoid

Heat, flames, ignition sources, and incompatibles.

### Hazardous Decomposition Products

Hydrogen chloride, nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, sulfur oxides, including sulfur oxide and sulfur dioxide.

### Hazardous Polymerization

Will not occur

### Incompatibles

METHYLENE BLUE:

Strong oxidizing agents, alkali, dichromates, alkali iodides, reducing agents.

## 11. Toxicological Information

### Product LD50 Values

Methylene Blue	Oral Rat LD50 (mg/kg):	1180. Investigated as a mutagen.
Methylene Blue	Dermal Rabbit LD50 (mg/kg):	

### Component Cancer List Status

	NTP Carcinogen		IARC Category
	Known	Anticipated	
METHYLENE BLUE	No	No	None

## 12. Ecological Information

### METHYLENE BLUE

When released into the soil, this material is not expected to evaporate significantly. When released into the water, this material is not expected to evaporate significantly. This material has an estimated bioconcentration factor (BCF) of less than 100. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition. When released into the air, this material may be removed from the atmosphere to a moderate extent by dry deposition.

## 13. Disposal Considerations

Observe all national, state, and local regulations regarding disposal.

## 14. Transport Information

### D.O.T.

Proper Shipping Name: Not regulated.

Hazard Class: N.A.

UN Number: N.A.

Packing Group: N.A.

### I.A.T.A.

Proper Shipping Name: Not regulated.

Hazard Class: N.A.

UN Number: N.A.

Packing Group: N.A.

### I.M.O.

Proper Shipping Name: Not regulated.

Hazard Class: N.A.

UN Number: N.A.

Packing Group: N.A.

## 15. Regulatory Information

### United States

#### TSCA Regulatory Statement

All intentional ingredients are listed on the TSCA Inventory.

#### SARA 311/312 Hazard Categories

Component	Fire	Pressure	Reactivity	Acute	Chronic
METHYLENE BLUE	No	No	No	Yes	No

### Europe

#### EEC Regulatory

All intentional ingredients are listed on the European EINECS Inventory.

#### EEC LABEL SYMBOL AND CLASSIFICATION



HARMFUL

**R: 22**

**Harmful if swallowed.**

**S: 22-24/25**

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## 16. Other Information

**NFPA Codes: Health 1 Flammability 0 Reactivity 0**

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