

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: Methylene Blue Stain
Cat. No: MB 119

Molecular Research Center, Inc.
5645 Montgomery Rd.
Cincinnati, Ohio 45212
USA 1-888-841-0900
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Product Name: **Methylene Blue Stain**

Application: Detection of immobilized nucleic acids on hybridization membranes.

Chemical Formula: formulation

Molecular Weight: not applicable

Synonyms: Aizen Methylene Blue BH or FZ, Basic Blue 9, Methylthionine, Methylthionine Chloride, Tetramethylene Blue.

CHEMTREC EMERGENCY NUMBER: Only in the event of an emergency involving a spill, leak, fire exposure or accident. USA: 1-800-424-9300; International: +1-703-527-3887.

2. HAZARD IDENTIFICATION

OSHA

Harmful by ingestion, Irritant

GHS - Classification

Acute toxicity, oral (Category 4)

Skin irritation (Category 2)

Eye Irritation (Category 2B)

Acute toxicity, inhalation (Category 5)

GHS Label elements

Pictogram



Signal word

Warning

Health Hazard

Hazard Class	Hazard category	Code	Health Hazard Statements
Acute toxicity, oral	Category 4	H302	Harmful if swallowed
Skin corrosion/irritation	Category 2	H315	Causes skin irritation
Serious eye damage/irritation	Category 2B	H320	Causes eye irritation
Acute toxicity, inhalation	Category 5	H333	May be harmful if inhaled

Precautionary statements

Code	Prevention precautionary statements
P233	Keep container tightly closed.
P261	Avoid breathing dust, fume, gas, mist, vapor, spray.
P264	Wash...thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P281	Use personal protective equipment as required.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

ROUTES OF EXPOSURE:	Skin	Yes
	Ingestion	Yes
	Inhalation	Yes

OVERVIEW

Methylene blue is relatively non-hazardous in routine industrial situations.

ACUTE EFFECTS

SKIN CONTACT: Solution may cause skin and eye irritation. Absorption into the body may lead to formation of methemoglobin, which in sufficient concentration causes cyanosis. Possible delayed onset = 2 to 4 hrs. Exposure can cause stomach pains, vomiting, diarrhea, nausea, dizziness and headache. Methylene blue exposure may color skin a bluish color. May cause photosensitization

CHRONIC EFFECTS: Laboratory experiments have shown mutagenic effects. Target organ: blood.

HMIS Classification

Health Hazard 2
Flammability 0
Physical hazards 0
PPE = C

NFPA Rating

Health Hazard 2
Fire 0
Reactivity 0

3. COMPOSITION/Information on Ingredients

Component	Classification	Concentration
Methylene Blue Stain	CAS-No 61-73-4	< 10 %

4. FIRST AID

EYE CONTACT: Check for and remove contact lenses. Flush with water in eyewash for at least 15 minutes, holding eyelids open. Obtain medical attention if discomfort or medical symptoms persist.

SKIN CONTACT: Remove contaminated clothing. Wash with soap and copious amounts of water for 15 minutes. Decontaminate body surface with running water and nonabrasive soap. Obtain medical attention if discomfort or symptoms persist. Wash contaminated clothing before reusing.

INHALATION: Remove to fresh air. Provide oxygen if breathing is difficult.

INGESTION: Remove dentures, if any. Wash mouth and throat if conscious. Do not induce vomiting unless directed to do so by medical personnel. Lower head so vomit will not reenter the mouth or throat. Never give an unconscious person anything to ingest. Obtain medical attention.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Utilize water spray, carbon dioxide, dry chemical powder or appropriate foam.

SPECIAL FIREFIGHTING PROCEDURES: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Emits toxic fumes under fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Wear self-contained breathing apparatus, rubber boots, and heavy gloves. Clean up area and hold spill in bag for waste disposal. Ventilate area and wash spill site. Do not let product enter drains. To dispose of waste, dissolve/mix with a combustible solvent and burn in a chemical incinerator with afterburner and scrubber. Observe all federal, state and local environmental regulations.

7. HANDLING AND STORAGE

Keep container tightly closed and store reagent in a cool and dry place. Avoid inhalation. Use chemical safety goggles, latex gloves, lab coat, NIOSH/MSHA-approved respirator. Wash hands thoroughly after handling. Avoid skin contact and inhalation. Wear eye protection and gloves when handling. Keep container tightly sealed to minimize evaporation. Avoid eating and smoking in work areas.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT: Wear eye protection, lab coat and gloves for routine operations. Avoid inhalation, contact with eyes and skin. Ensure access to safety shower and eye bath. The product contains no substances with occupational exposure limit values.

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Description: Blue liquid
Melting point: 109 C
Solubility: 1g/25 ml water
1 g/65 ml alcohol
Insoluble in ether

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal temperature and pressure.

INCOMPATIBILITIES: Strong oxidizing agents, acids and alkalis. Avoid heat and flames. May emit toxic fumes under fire conditions.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Toxic fumes of carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides, and hydrogen chloride gases.

11. TOXICOLOGICAL INFORMATION

RTECS NO: SO5600000. **Rat:** oral, LD50=1180 mg/kg; **Mouse:** oral LD50=3500 mg/kg. **Target organ or tissue:** Lung, (thorax or respiration). Blood (cyanosis). POSSIBLE MUTAGEN. SEE RTECS ENTRY FOR COMPLETE INFORMATION.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE: When released into the water this material is not expected to evaporate significantly. Methylene Blue has a bioconcentration factor (BCF) of less than 100. It is expected to significantly bioaccumulate.

ENVIRONMENTAL TOXICITY: No information found.

13. DISPOSAL CONSIDERATIONS

DISPOSAL BY INCINERATION: Keep in sealed containers between use and final disposal. Solution may be incinerated in a hazardous waste incinerator equipped with afterburner and scrubber. Waste disposal activities are subject to federal, state and local laws and regulations.

14. TRANSPORTATION INFORMATION

DOT: This material is not a hazardous material as defined by 49CFR 172.101 by the U.S. DOT.

IATA: Non-hazardous for air transport.

15. REGULATORY INFORMATION

OSHA Hazards: Irritant

CHEMICAL INVENTORY STATUS

INGREDIENT	TSCA	EC	JAPAN	AUSTRALIA	KOREA	DSL	NDSL	PHIL
Methylene Blue 61-73-4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
INGREDIENT	SARA 302	SARA 313	CERCLA	RCRA	TSCA			
Methylene Blue 61-73-4	RQ	TPQ	List	Chem. Catg.	261.33	8(d)		
	No	No	No	No	No	No		

SARA 311/312 Acute: Yes; Chronic: No; Fire: No; Pressure: No; Reactivity: No
DSCL (EEC): R36/38- Irritating to eyes and skin.

16. OTHER INFORMATION

Reviewed by BW, MJ
Creation date 9/01/94
Revision date 10/16/2023 SP

Reason for Revision: Update to Globally Harmonized System of Chemical Classification.

This information is believed to be accurate and represents the information currently available to us. However, we make no warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.