Methylene Blue

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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SECTION 1: Identification

1.1. Identification

Product form	:	Substance
Substance name	:	Methylene Blue
CAS-No.	:	61-73-4
Product code	:	LC16850
Formula	:	C16H18N3S.Cl
Synonyms	:	3,7-bis(dimethylamino)phenazathionium chloride / 3,9-bis(dimethylamino)phenazothioniumchloride / aizen methylene blue / basic blue 9 / basic lake blue / C.I.52015 / calcozine blue ZF / chromosmon / D and C blue number 1 / duasyn basic blue IAD / external blue 1 / hidaco methylene blue salt free / leather pure blue HB / methylene blue 2B / methylene blue 2BN / methylene blue chloride / methylene blue polychrome / methylene blue R / methylene blue, zinc free / methylthionine / methylthionine chloride / mitsui methylene blue / sandocryl blue BRL / schultz No. 1038 / solvent blue 8 / swiss blue / tetramethylene blue / tetramethylthionine chloride / urolene blue / yamamoto methylene blue B / yamamoto methylene blue ZF

1.2. Recommended use and restrictions on use

Use of the substance/mixture	:	For laboratory and manufacturing use only.
Recommended use	:	Laboratory chemicals
Restrictions on use	:	Not for food, drug or household use

1.3. Supplier

LabChem, Inc.
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number	:	CHEMTREC: 1-800-424-9300 or +1-703-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Acute toxicity (oral) Category 4	H302 Harmful if swallowed
Hazardous to the aquatic environment - Acute Hazard Category 2	H401 Toxic to aquatic life

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning

Hazard statements (GHS US) :
H302 - Harmful if swallowed
H401 - Toxic to aquatic life

Precautionary statements (GHS US) :
P264 - Wash exposed skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P273 - Avoid release to the environment.
P310 - Immediately call a poison center or doctor/physician.
P501 - Dispose of contents/container to comply with local, state and federal regulations
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	GHS US classification
Methylene Blue (Main constituent)	(CAS-No.) 61-73-4	100	Acute Tox. 4 (Oral), H302 Aquatic Acute 2, H401

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with labored breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.

First-aid measures after eye contact : Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Victim is fully conscious: immediately induce vomiting. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms : Harmful if swallowed. Slightly irritant to eyes.

Symptoms/effects after skin contact : May stain the skin. Photoallergy.

Symptoms/effects after eye contact : Redness of the eye tissue. Lacrimation. Slight irritation.

Symptoms/effects after ingestion : AFTER ABSORPTION OF LARGE QUANTITIES: Irritation of the oral mucous membranes. Nausea. Vomiting. Abdominal pain. Diarrhoea. Change in the blood composition. Methemoglobinemia. Headache. Dizziness. Respiratory difficulties.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Adapt extinguishing media to the environment for surrounding fires.

5.2. Specific hazards arising from the chemical

Fire hazard : DIRECT FIRE HAZARD. Non combustible.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions : Dilute toxic gases with water spray. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.

Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Gloves. Protective clothing. Dust cloud production: compressed air/oxygen apparatus.

Emergency procedures : Mark the danger area. Prevent dust cloud formation. No naked flames. Wash contaminated clothes.

Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Do not breathe dust.

Emergency procedures : Stop release. Ventilate area.

6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment : Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray.

Methods for cleaning up : Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid raising dust. Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Do not discharge the waste into the drain.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources.

Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. reducing agents. (strong) bases.

Storage area : Store in a dry area. Provide the tank with earthing. Meet the legal requirements.

Special rules on packaging : SPECIAL REQUIREMENTS: correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials : SUITABLE MATERIAL: glass.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Safety glasses. Dust production: dust mask with filter type P2.

Materials for protective clothing:

GIVE GOOD RESISTANCE: PVC

Hand protection:

Gloves

Eye protection:

Safety glasses. In case of dust production: protective goggles

Skin and body protection:

Protective clothing

Respiratory protection:

Dust production: dust mask with filter type P2

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Crystalline solid. Crystalline powder.
Color	:	Dark green-blue
Odor	:	Almost odourless
Odor threshold	:	No data available
pH	:	4 (1 %)
Melting point	:	190 °C
Freezing point	:	No data available
Boiling point	:	Not applicable
Flash point	:	Not applicable
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	< 0.1 hPa (20 °C)
Relative vapor density at 20 °C	:	Not applicable
Relative density	:	No data available
Molecular mass	:	319.88 g/mol
Solubility	:	Moderately soluble in water. Soluble in chloroform. Soluble in acetic acid. Soluble in glycerol. Water: 2.5 g/100ml Ethanol: 1.5 g/100ml Acetone: 0.5 g/100ml
Log Pow	:	5.85 (Estimated value)
Auto-ignition temperature	:	No data available
Decomposition temperature	:	190 °C
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

VOC content	:	0 %
Other properties	:	Substance has acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Heat. Incompatible materials. Avoid dust formation.

10.5. Incompatible materials

Strong oxidizers. Strong reducing agents. Strong bases.

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

Methylene Blue (61-73-4)	
LD50 oral rat	1180 mg/kg (Rat, Oral)
ATE US (oral)	1180 mg/kg body weight

Skin corrosion/irritation : Not classified
pH: 4 (1 %)

Serious eye damage/irritation : Not classified
pH: 4 (1 %)

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

Likely routes of exposure : Inhalation. Skin and eye contact.

Potential Adverse human health effects and symptoms : Harmful if swallowed. Slightly irritant to eyes.

Symptoms/effects after skin contact : May stain the skin. Photoallergy.

Symptoms/effects after eye contact : Redness of the eye tissue. Lacrimation. Slight irritation.

Symptoms/effects after ingestion : AFTER ABSORPTION OF LARGE QUANTITIES: Irritation of the oral mucous membranes. Nausea. Vomiting. Abdominal pain. Diarrhoea. Change in the blood composition. Methemoglobinemia. Headache. Dizziness. Respiratory difficulties.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.

Ecology - air : Photodegradation in the air. Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ecology - water : Toxic to crustacea. Harmful to fishes. Water pollutant (surface water). Inhibition of activated sludge. pH shift. Harmful to plankton.

Methylene Blue (61-73-4)	
LC50 fish 1	18 mg/l (96 h, Mystus vittatus)
EC50 Daphnia 1	2.26 mg/l (48 h, Daphnia magna)

12.2. Persistence and degradability

Methylene Blue (61-73-4)	
Persistence and degradability	Biodegradability in water: no data available.

12.3. Bioaccumulative potential

Methylene Blue (61-73-4)	
Log Pow	5.85 (Estimated value)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an incinerator for chlorinated waste materials with energy recovery. Dissolve or mix with a combustible solvent.

Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

Transportation of Dangerous Goods

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

Methylene Blue (61-73-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Health hazard - Acute toxicity (any route of exposure)

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

Methylene Blue (61-73-4)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

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Revision date : 08/15/2019

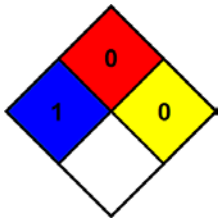
Full text of H-phrases: see section 16:

H302	Harmful if swallowed
H401	Toxic to aquatic life

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : E

E - Safety glasses, Gloves, Dust respirator

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