

SAFETY DATA SHEET

Methylene Blue Concentrate

According to the REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 No. 758, as amended.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name Methylene Blue Concentrate
Product number PL.8006, PL.8006/4, PL.8006/5

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Laboratory reagent.
Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier Pro-Lab Diagnostics
3 Bassendale Road
Wirral
Merseyside
CH62 3QL
Tel: 0151 353 1613
Fax: 0151 353 1614
mowen@pro-lab.com

1.4. Emergency telephone number

Emergency telephone +44 (0)151 353 1613 Monday to Friday 9.00 to 17.00
+44 (0)7714 429 646 outside the above hours

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (SI 2019 No. 720)

Physical hazards Flam. Liq. 3 - H226
Health hazards Acute Tox. 4 - H302 Acute Tox. 3 - H311 Acute Tox. 3 - H331 STOT SE 1 - H370
Environmental hazards Not Classified
Human health Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
Physicochemical The product is highly flammable.

2.2. Label elements

Hazard pictograms



Signal word

Danger

Hazard statements

H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H311+H331 Toxic in contact with skin or if inhaled.
H370 Causes damage to organs .

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Precautionary statements	<p>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P270 Do not eat, drink or smoke when using this product.</p> <p>P280 Wear protective clothing, gloves, eye and face protection.</p> <p>P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.</p> <p>P330 Rinse mouth.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P311 Call a POISON CENTER/ doctor.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
Contains	methanol, methylthioninium chloride hydrate
Supplementary precautionary statements	<p>P240 Ground and bond container and receiving equipment.</p> <p>P241 Use explosion-proof electrical equipment.</p> <p>P242 Use non-sparking tools.</p> <p>P243 Take action to prevent static discharges.</p> <p>P260 Do not breathe vapour/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water.</p> <p>P361+P364 Take off immediately all contaminated clothing and wash it before reuse.</p> <p>P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.</p> <p>P308+P311 IF exposed or concerned: Call a POISON CENTER or doctor.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P403+P235 Store in a well-ventilated place. Keep cool.</p> <p>P405 Store locked up.</p>

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

methanol	25 - <50%
CAS number: 67-56-1	EC number: 200-659-6
Classification Flam. Liq. 2 - H225 Acute Tox. 3 - H301 Acute Tox. 3 - H311 Acute Tox. 3 - H331 STOT SE 1 - H370	
methylthioninium chloride hydrate	2.5 - <5%
CAS number: 122965-43-9	
Classification Acute Tox. 4 - H302	

The full text for all hazard statements is displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information Keep affected person away from heat, sparks and flames.

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Inhalation	Immediate first aid is imperative. Loosen tight clothing such as collar, tie or belt. Maintain an open airway. Move affected person to fresh air at once. Place unconscious person on their side in the recovery position and ensure breathing can take place. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen.
Ingestion	Rinse mouth thoroughly with water. Do not induce vomiting unless under the direction of medical personnel. If in doubt, get medical attention promptly.
Skin contact	Rinse cautiously with water for several minutes. Remove contaminated clothing. Wash contaminated clothing before reuse.
Eye contact	Remove contact lenses, if present and easy to do. Continue rinsing. Rinse immediately with plenty of water. Get medical attention if symptoms are severe or persist after washing.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation	Symptoms following overexposure may include the following: Coughing, chest tightness, feeling of chest pressure. Drowsiness, dizziness, disorientation, vertigo. May cause discomfort. Central nervous system depression.
Ingestion	May cause discomfort if swallowed. Coughing, chest tightness, feeling of chest pressure. Liquid irritates mucous membranes and may cause abdominal pain if swallowed. Blindness.
Skin contact	Causes mild skin irritation. Prolonged contact may cause redness, irritation and dry skin. Overexposure may depress the central nervous system, causing dizziness and intoxication.
Eye contact	May cause temporary eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	Flammable liquid and vapour. Vapours may be ignited by a spark, a hot surface or an ember.
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5.3. Advice for firefighters

Protective actions during firefighting	Fight fire from safe distance or protected location. Use water spray to reduce vapours. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak.
Special protective equipment for firefighters	Use air-supplied respirator, gloves and protective goggles. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Use protective equipment appropriate for surrounding materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Follow precautions for safe handling described in this safety data sheet. No smoking, sparks, flames or other sources of ignition near spillage. Provide adequate ventilation.
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6.2. Environmental precautions

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Environmental precautions Avoid the spillage or runoff entering drains, sewers or watercourses.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Take care as floors and other surfaces may become slippery. Contain spillage with sand, earth or other suitable non-combustible material. Absorb in vermiculite, dry sand or earth and place into containers. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid breathing vapours. Avoid contact with eyes and prolonged skin contact. Avoid the formation of mists. Ground/bond container and receiving equipment.

Advice on general occupational hygiene Do not eat, drink or smoke when using this product. Eye wash facilities and emergency shower must be available when handling this product. Good personal hygiene procedures should be implemented. Take off contaminated clothing and wash it before reuse. Wash promptly with soap and water if skin becomes contaminated.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Keep at temperature not exceeding 25°C.

Storage class Flammable liquid storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

methanol

Long-term exposure limit (8-hour TWA): WEL 200 ppm 266 mg/m³

Short-term exposure limit (15-minute): WEL 250 ppm 333 mg/m³

Sk

WEL = Workplace Exposure Limit.

Sk = Can be absorbed through the skin.

methanol (CAS: 67-56-1)

Methylene Blue Concentrate

DNEL	Workers - Inhalation; Long term systemic effects: 260 mg/m ³
	Workers - Inhalation; Short term systemic effects: 260 mg/m ³
	Workers - Inhalation; Long term local effects: 260 mg/m ³
	Workers - Inhalation; Short term local effects: 260 mg/m ³
	Workers - Dermal; Long term systemic effects: 40 mg/kg/day
	Workers - Dermal; Short term systemic effects: 40 mg/kg/day
	General population - Inhalation; Long term systemic effects: 50 mg/m ³
	General population - Inhalation; Short term systemic effects: 50 mg/m ³
	General population - Inhalation; Long term local effects: 50 mg/m ³
	General population - Inhalation; Short term local effects: 50 mg/m ³
	General population - Dermal; Long term systemic effects: 8 mg/kg/day
	General population - Dermal; Short term systemic effects: 8 mg/kg/day
	General population - Oral; Long term systemic effects: 8 mg/kg/day
General population - Oral; Short term systemic effects: 8 mg/kg/day	
PNEC	- Fresh water; 20.8 mg/l
	- Fresh water, Intermittent release; 1540 mg/l
	- marine water; 2.08 mg/l
	- STP; 100 mg/l
	- Sediment (Freshwater); 77 mg/kg
	- Sediment (Marinewater); 7.7 mg/kg
- Soil; 100 mg/kg	

8.2. Exposure controls

Appropriate engineering controls	Avoid inhalation of vapours and spray/mists. Good general ventilation should be adequate to control worker exposure to airborne contaminants. In case of insufficient ventilation, wear suitable respiratory equipment.
Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Frequent changes are recommended. The breakthrough time for any glove material may be different for different glove manufacturers.
Other skin and body protection	Wear anti-static protective clothing if there is a risk of ignition from static electricity.
Hygiene measures	Do not eat, drink or smoke when using this product. Eye wash facilities and emergency shower must be available when handling this product. Good personal hygiene procedures should be implemented.
Respiratory protection	If ventilation is inadequate, suitable respiratory protection must be worn. Seek advice from supervisor on the company's respiratory protection standards. Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Dark. Blue.
Odour	Alcoholic.
pH	Not relevant.

Methylene Blue Concentrate

Melting point	Not determined.
Initial boiling point and range	Not determined.
Flash point	~ 25°C
Evaporation rate	Not determined.
Flammability (solid, gas)	Not determined.
Upper/lower flammability or explosive limits	Not determined.
Vapour pressure	Not determined.
Vapour density	Not determined.
Relative density	Not determined.
Solubility(ies)	Soluble in water.
Partition coefficient	Not determined.
Auto-ignition temperature	Not determined.
Decomposition Temperature	Not determined.
Viscosity	Not determined.
Explosive properties	Not considered to be explosive.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information None.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No test data specifically related to reactivity available for this product or its ingredients.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Acids. Alkalis. Oxidising agents.

10.4. Conditions to avoid

Conditions to avoid Avoid heat, flames and other sources of ignition.

10.5. Incompatible materials

Materials to avoid Acids. Alkalis. Oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition or combustion products may include the following substances: Carbon dioxide (CO₂). Carbon monoxide (CO). Nitrous gases (NO_x). Hydrocarbons. Does not decompose when used and stored as recommended.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Methylene Blue Concentrate

Acute toxicity - oral

Notes (oral LD₅₀) Acute Tox. 4 - H302 Harmful if swallowed.

ATE oral (mg/kg) 619.83

Acute toxicity - dermal

Notes (dermal LD₅₀) Acute Tox. 3 - H311 Toxic in contact with skin.

ATE dermal (mg/kg) 652.17

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Acute Tox. 3 - H331 Toxic if inhaled.

ATE inhalation (gases ppm) 1,521.74

ATE inhalation (vapours mg/l) 6.52

Skin corrosion/irritation

Animal data Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure STOT SE 1 - H370

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard Not anticipated to present an aspiration hazard, based on chemical structure.

Inhalation

Harmful if inhaled. Symptoms following overexposure may include the following: Pain or irritation. Irritation of nose, throat and airway. Coughing. Wheezing/breathing difficulties.

Ingestion

Toxic if swallowed. May cause discomfort if swallowed.

Skin contact

Toxic in contact with skin. Prolonged and frequent contact may cause redness and irritation.

Eye contact

No specific symptoms known. May cause temporary eye irritation.

Acute and chronic health hazards

Causes damage to organs .

Toxicological information on ingredients.

Methylene Blue Concentrate

methanol

Acute toxicity - oral

Notes (oral LD₅₀) International Programme on Chemical Safety (IPCS) (1997) Environmental Health Criteria 196: Methanol. Geneva, World Health Organization. Toxic if swallowed.

ATE oral (mg/kg) 100.0

Acute toxicity - dermal

Notes (dermal LD₅₀) Converted acute toxicity point estimate (cATpE) Toxic in contact with skin.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Converted acute toxicity point estimate (cATpE) Toxic if inhaled.

ATE inhalation (gases ppm) 700.0

ATE inhalation (vapours mg/l) 3.0

Skin corrosion/irritation

Animal data Dose: 2.5cm x 2.5cm, 20 hours, Rabbit Erythema/eschar score: No erythema (0). Oedema score: No oedema (0). REACH dossier information. Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation Dose: 0.05 ml, 24 hours, Rabbit REACH dossier information. Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising. REACH dossier information. Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative. REACH dossier information. Based on available data the classification criteria are not met.

Genotoxicity - in vivo Chromosome aberration: Negative. REACH dossier information. Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure STOT SE 1 - H370

Target organs Eyes Central nervous system

Specific target organ toxicity - repeated exposure

STOT - repeated exposure LOAEL 2340 mg/kg/day, Oral, Monkey REACH dossier information. Based on available data the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity Based on available data the classification criteria are not met. However, large or frequent spills may have hazardous effects on the environment.

Ecological information on ingredients.

methanol

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Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 15400 mg/l, Lepomis macrochirus (Bluegill) EC ₅₀ , 96 hours: 12700 mg/l, Lepomis macrochirus (Bluegill) REACH dossier information.
Acute toxicity - aquatic invertebrates	EC ₅₀ , 96 hours: 18260 mg/l, Daphnia magna REACH dossier information.
Acute toxicity - aquatic plants	EC ₅₀ , 96 hours: ~ 22000 mg/l, Pseudokirchneriella subcapitata REACH dossier information.
Acute toxicity - microorganisms	IC ₅₀ , 3 hours: >1000 mg/l, Activated sludge REACH dossier information.

12.2. Persistence and degradability

Persistence and degradability There are no data on the degradability of this product. Volatile substances are degraded in the atmosphere within a few days.

Ecological information on ingredients.

methanol

Phototransformation	Water - DT ₅₀ : 17.2 days REACH dossier information.
Biodegradation	Water - Degradation (95%): 20 days Water - Degradation (91%): 15 days Water - Degradation (88%): 10 days Water - Degradation (76%): 5 days REACH dossier information. The substance is readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential	Not determined.
Partition coefficient	Not determined.

Ecological information on ingredients.

methanol

Partition coefficient	log Pow: -0.77 REACH dossier information.
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12.4. Mobility in soil

Mobility The product contains organic solvents which will evaporate easily from all surfaces. The product contains substances which are water-soluble and may spread in water systems.

Ecological information on ingredients.

methanol

Mobility	Mobile.
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12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

Methylene Blue Concentrate

methanol

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current UK criteria.

12.6. Other adverse effects

Other adverse effects Not relevant.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Reuse or recycle products wherever possible. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

Disposal methods Absorb in vermiculite, dry sand or earth and place into containers. Place waste in labelled, sealed containers. Dispose of contents/container in accordance with national regulations.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 1986

UN No. (IMDG) 1986

UN No. (ICAO) 1986

UN No. (ADN) 1986

14.2. UN proper shipping name

Proper shipping name (ADR/RID) ALCOHOLS, FLAMMABLE, TOXIC, N.O.S. (methanol)

Proper shipping name (IMDG) ALCOHOLS, FLAMMABLE, TOXIC, N.O.S. (methanol)

Proper shipping name (ICAO) ALCOHOLS, FLAMMABLE, TOXIC, N.O.S. (methanol)

Proper shipping name (ADN) ALCOHOLS, FLAMMABLE, TOXIC, N.O.S. (methanol)

14.3. Transport hazard class(es)

ADR/RID class 3

ADR/RID subsidiary risk 6.1

ADR/RID classification code FT1

ADR/RID label 3

IMDG class 3

IMDG subsidiary risk 6.1

ICAO class/division 3

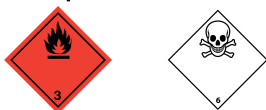
ICAO subsidiary risk 6.1

ADN class 3

ADN subsidiary risk 6.1

Methylene Blue Concentrate

Transport labels



14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ICAO packing group	III
ADN packing group	III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

EmS	F-E, S-D
ADR transport category	3
Emergency Action Code	•3W
Hazard Identification Number (ADR/RID)	36
Tunnel restriction code	(D/E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not relevant.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations	EH40/2005 Workplace exposure limits. The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 No. 758, as amended. The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019 No. 720, as amended.
EU legislation	Council Directive of 20 May 1975 on the approximation of the laws of the Member States relating to aerosol dispensers (75/324/EEC).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Methylene Blue Concentrate

Abbreviations and acronyms used in the safety data sheet	<p>ATE: Acute Toxicity Estimate. cATpE: Converted acute toxicity point estimate. ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. IATA: International Air Transport Association. ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air. IMDG: International Maritime Dangerous Goods. LD50: Lethal Dose to 50% of a test population (Median Lethal Dose). LC50: Lethal Concentration to 50 % of a test population. RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail. BCF: Bioconcentration Factor. EC₅₀: 50% of maximal Effective Concentration. NOAEL: No Observed Adverse Effect Level. NOEC: No Observed Effect Concentration.</p>
Classification abbreviations and acronyms	<p>Acute Tox. = Acute toxicity Eye Dam. = Serious eye damage Flam. Liq. = Flammable liquid Skin Corr. = Skin corrosion STOT SE = Specific target organ toxicity-single exposure</p>
Classification procedures according to SI 2019 No. 720	<p>Flam. Liq. 3 - H226: Expert judgement. Acute Tox. 4 - H302, Acute Tox. 3 - H311, Acute Tox. 3 - H331, STOT SE 1 - H370: Calculation method.</p>
Revision comments	<p>Revised regulations.</p>
Revision date	<p>26/09/2022</p>
Revision	<p>9</p>
Supersedes date	<p>01/10/2017</p>
SDS number	<p>814</p>
Hazard statements in full	<p>H225 Highly flammable liquid and vapour. H226 Flammable liquid and vapour. H301 Toxic if swallowed. H302 Harmful if swallowed. H311 Toxic in contact with skin. H311+H331 Toxic in contact with skin or if inhaled. H331 Toxic if inhaled. H370 Causes damage to organs .</p>

The information in this safety data sheet was obtained from current and reliable sources. However, the data is provided without warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions for use, handling, storage and disposal of this product are beyond Pro-Lab Diagnostics control, it is the users responsibility to perform thorough testing of this product when used in combination with any other product. It is suggested that users familiarise themselves with this safety data sheet before handling the product.