SAFETY DATA SHEET Methylene Blue

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

Product number PL.7027, PL.7027/25, PL.7027/100, PL.7028, PL.7029

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

Identified uses Laboratory reagent.

Uses advised againstNo 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 - H332 STOT SE 1 - H370

Environmental hazards Not Classified

Human health The liquid may be irritating to eyes, respiratory system and skin.

Physicochemical The product is highly flammable.

2.2. Label elements

Hazard pictograms







Signal word Dange

Hazard statements H226 Flammable liquid and vapour.

H332 Harmful if inhaled.

H370 Causes damage to organs .

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Precautionary statements P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

smoking.

P270 Do not eat, drink or smoke when using this product. P280 Wear protective clothing, gloves, eye and face protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.

Rinse skin with water or shower.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a POISON CENTRE/doctor if you feel unwell.

P501 Dispose of contents/ container in accordance with national regulations.

Contains methanol

Supplementary precautionary

P233 Keep container tightly closed.

statements P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof electrical equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P260 Do not breathe vapour/ spray.

P264 Wash contaminated skin thoroughly after handling. P271 Use only outdoors or in a well-ventilated area.

P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.

P308+P311 IF exposed or concerned: Call a POISON CENTER or doctor.

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

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 10 - <25%

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

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

SECTION 4: First aid measures

4.1. Description of first aid measures

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.

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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.

Ingestion May cause discomfort if swallowed.

Skin contact Causes mild skin irritation. Prolonged contact may cause redness, irritation and dry skin.

Eye contact Causes eye irritation. Redness. Redness. Profuse watering of the eyes.

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.

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.

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.

6.2. Environmental precautions

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 upTake 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.

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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)

DNEL Workers - Inhalation; Long term systemic effects: 260 mg/m³

Workers - Inhalation; Short term systemic effects: 260 mg/m³ Workers - Inhalation; Long term local effects: 260 mg/m³ Workers - Inhalation; Short term local effects: 260 mg/m³ 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/m³ General population - Inhalation; Short term systemic effects: 50 mg/m³ General population - Inhalation; Long term local effects: 50 mg/m³ General population - Inhalation; Short term local effects: 50 mg/m³ 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/kgSediment (Marinewater); 7.7 mg/kg

- Soil; 100 mg/kg

8.2. Exposure controls

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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.

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 Almost odourless. Alcoholic.

pН Not relevant.

Melting point Not determined.

Initial boiling point and range

Flash point Not relevant.

Evaporation rate Not determined.

Flammability (solid, gas) Not determined.

Upper/lower flammability or

explosive limits

Not determined.

Not relevant.

Not determined. Vapour pressure

Vapour density Not relevant.

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.

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9.2. Other information

Other information None.

SECTION 10: Stability and reactivity

10.1. Reactivity

ReactivityNo 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

Acids. Alkalis. Oxidising agents.

reactions

products

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

Thermal decomposition or combustion products may include the following substances:

Carbon dioxide (CO2). Carbon monoxide (CO). Nitrous gases (NOx). Hydrocarbons. Does not

decompose when used and stored as recommended.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅o) Based on available data the classification criteria are not met.

ATE oral (mg/kg) 2,054.79

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

ATE dermal (mg/kg) 2,054.79

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Acute Tox. 4 - H332 Harmful if inhaled.

ATE inhalation (gases ppm) 4,794.52

ATE inhalation (vapours mg/l) 20.55

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

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Genotoxicity - in vitroBased 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 May be harmful if inhaled. Symptoms following overexposure may include the following: Pain

or irritation. Irritation of nose, throat and airway. Coughing. Wheezing/breathing difficulties.

Ingestion May cause discomfort if swallowed.

Skin contact No specific symptoms known. Prolonged and frequent contact may cause redness and

irritation.

Eye contact Causes eye irritation. Profuse watering of the eyes. Itchiness. Redness.

Acute and chronic health

hazards

No specific long-term effects known.

methanol

Acute toxicity - oral

Toxicological information on ingredients.

Notes (oral LD₅o) 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

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Serious eye Dose: 0.05 ml, 24 hours, Rabbit REACH dossier information. Based on available

damage/irritation 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

ToxicityBased 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

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 15400 mg/l, Lepomis macrochirus (Bluegill)

EC₅o, 96 hours: 12700 mg/l, Lepomis macrochirus (Bluegill)

REACH dossier information.

Acute toxicity - aquatic

EC₅o, 96 hours: 18260 mg/l, Daphnia magna

invertebrates

REACH dossier information.

Acute toxicity - aquatic

EC₅₀, 96 hours: ~ 22000 mg/l, Pseudokirchneriella subcapitata

plants

REACH dossier information.

Acute toxicity - IC₅₀, 3 hours: >1000 mg/l, Activated sludge

microorganisms 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 - DT₅₀: 17.2 days

REACH dossier information.

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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.

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.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB

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

assessment

Ecological information on ingredients.

methanol

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

assessment

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) 1987

UN No. (IMDG) 1987

Methylene Blue

UN No. (ICAO) 1987 UN No. (ADN) 1987

14.2. UN proper shipping name

Proper shipping name

ALCOHOLS, N.O.S. (methanol)

(ADR/RID)

Proper shipping name (IMDG) ALCOHOLS, N.O.S. (methanol) Proper shipping name (ICAO) ALCOHOLS, N.O.S. (methanol) Proper shipping name (ADN) ALCOHOLS, N.O.S. (methanol)

14.3. Transport hazard class(es)

ADR/RID class

ADR/RID classification code F1

ADR/RID label 3

IMDG class 3

ICAO class/division 3

ADN class 3

Transport labels



14.4. Packing group

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

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant No.

14.6. Special precautions for user

EmS F-E, S-D

3 ADR transport category **Emergency Action Code** •3Y 30

Hazard Identification Number

(ADR/RID)

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 Not applicable. Annex II of MARPOL 73/78 and the IBC Code

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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

Abbreviations and acronyms used in the safety data sheet

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.

ATE: Acute Toxicity Estimate.
BCF: Bioconcentration Factor.
DNEL: Derived No Effect Level.

EC₅₀: 50% of maximal Effective Concentration. IATA: International Air Transport Association.

ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.

IMDG: International Maritime Dangerous Goods.

LC50: Lethal Concentration to 50 % of a test population.

LD50: Lethal Dose to 50% of a test population (Median Lethal Dose).

NOAEL: No Observed Adverse Effect Level. NOEC: No Observed Effect Concentration. PNEC: Predicted No Effect Concentration.

RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.

Classification abbreviations

and acronyms

Acute Tox. = Acute toxicity
Flam. Liq. = Flammable liquid

STOT SE = Specific target organ toxicity-single exposure

Classification procedures according to SI 2019 No. 720

Flam. Liq. 3 - H226: Expert judgement. Acute Tox. 4 - H332, STOT SE 1 - H370: Calculation

method.

Revision comments Revised regulations.

Revision date 26/09/2022

Revision 10

Supersedes date 01/10/2017

SDS number 813

Hazard statements in full H225 Highly flammable liquid and vapour.

H226 Flammable liquid and vapour.

H301 Toxic if swallowed. H311 Toxic in contact with skin.

H331 Toxic if inhaled.

H332 Harmful if inhaled.

H370 Causes damage to organs .

Methylene Blue

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.