SAFETY DATA SHEET  
Methylene Blue  

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 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 (EC 1272/2008)
Physical hazards Flam. Liq. 3 - H226  
Health hazards Acute Tox. 4 - H332 STOT SE 1 - H370  
Environmental hazards Not Classified

Classification (67/548/EEC or 1999/45/EC) T; R39/24/25. Xn; R20. R10

2.2. Label elements
Pictogram

Signal word Danger  
Hazard statements H226 Flammable liquid and vapour.  
H332 Harmful if inhaled.  
H370 Causes damage to organs .
Methylene Blue

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/ shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER/ doctor if you feel unwell.
P501 Dispose of contents/ container in accordance with national regulations.

Contains methanol

Supplementary precautionary statements

P233 Keep container tightly closed.
P240 Ground/ bond container and receiving equipment.
P241 Use explosion-proof electrical equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe vapour/ spray.
P264 Wash contaminated skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER/ doctor if you feel unwell.
P501 Dispose of contents/ container in accordance with national regulations.

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

<table>
<thead>
<tr>
<th>methanol</th>
<th>10 - &lt;25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 67-56-1</td>
<td>EC number: 200-659-6</td>
</tr>
<tr>
<td>REACH registration number: 01-2119433307-44-XXXX</td>
<td></td>
</tr>
</tbody>
</table>

Classification

Flam. Liq. 2 - H225
Acute Tox. 3 - H301
Acute Tox. 3 - H311
Acute Tox. 3 - H331
STOT SE 1 - H370

Classification (67/548/EEC or 1999/45/EC)
F; R11. T; R23/24/25, R39/23/24/25

The Full Text for all R-Phrases and Hazard Statements are 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.
Methylene Blue

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.

Ingestion
May cause discomfort if swallowed.

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

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.

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 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
Methylene Blue

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.

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.

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
Methylene Blue

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid.</td>
</tr>
<tr>
<td>Colour</td>
<td>Dark. Blue.</td>
</tr>
<tr>
<td>Odour</td>
<td>Almost odourless. Alcoholic.</td>
</tr>
<tr>
<td>pH</td>
<td>Not relevant.</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Initial boiling point and range</td>
<td>Not relevant.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not relevant.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not relevant.</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Soluble in water.</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Auto-Ignition temperature</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not considered to be explosive.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Does not meet the criteria for classification as oxidising.</td>
</tr>
</tbody>
</table>

9.2. Other information

<table>
<thead>
<tr>
<th>Information</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td>None.</td>
</tr>
</tbody>
</table>

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


10.4. Conditions to avoid

Conditions to avoid

Avoid heat, flames and other sources of ignition.

10.5. Incompatible materials

Materials to avoid


10.6. Hazardous decomposition products
Methylene Blue

Hazardous decomposition products

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 LD₅₀) Based on available data the classification criteria are not met.
ATE oral (mg/kg) 2,054.79452055

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.
ATE dermal (mg/kg) 2,054.79452055

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Acute Tox. 4 - H332 Harmful if inhaled.
ATE inhalation (gases ppm) 4,794.52054795
ATE inhalation (vapours mg/l) 20.54794521

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.

Toxicological information on ingredients.

methanol

Acute toxicity - oral
**Methylene Blue**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE oral (mg/kg)</td>
<td>300.0</td>
</tr>
<tr>
<td>Acute toxicity - dermal</td>
<td></td>
</tr>
<tr>
<td>Notes (dermal LD₅₀)</td>
<td>Converted acute toxicity point estimate (cATpE) Toxic in contact with skin.</td>
</tr>
<tr>
<td>ATE dermal (mg/kg)</td>
<td>300.0</td>
</tr>
<tr>
<td>Acute toxicity - inhalation</td>
<td></td>
</tr>
<tr>
<td>Notes (inhalation LC₅₀)</td>
<td>Converted acute toxicity point estimate (cATpE) Toxic if inhaled.</td>
</tr>
<tr>
<td>ATE inhalation (gases ppm)</td>
<td>700.0</td>
</tr>
<tr>
<td>ATE inhalation (vapours mg/l)</td>
<td>3.0</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td></td>
</tr>
<tr>
<td>Animal data</td>
<td>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.</td>
</tr>
</tbody>
</table>

**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. |

**Specific target organ toxicity - single exposure**

<table>
<thead>
<tr>
<th>STOT - single exposure</th>
<th>STOT SE 1 - H370</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target organs</td>
<td>Eyes Central nervous system</td>
</tr>
</tbody>
</table>

### 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 |
|------------------|------------------------------------------------------------------|
| Acute toxicity - fish | LC₅₀, 96 hours: 15400 mg/l, Lepomis macrochirus (Bluegill) |
| | EC₅₀, 96 hours: 12700 mg/l, Lepomis macrochirus (Bluegill) |
| | REACH dossier information. |
| Acute toxicity - aquatic invertebrates | EC₅₀, 96 hours: 18260 mg/l, Daphnia magna |
| | REACH dossier information. |
| Acute toxicity - aquatic plants | EC₅₀, 96 hours: ~ 22000 mg/l, Pseudokirchneriella subcapitata |
| | REACH dossier information. |
| Acute toxicity - microorganisms | IC₅₀, 3 hours: >1000 mg/l, Activated sludge |
| | REACH dossier information. |
Methylene Blue

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.

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

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
Methylene Blue

UN No. (ADR/RID) 1987
UN No. (IMDG) 1987
UN No. (ICAO) 1987
UN No. (ADN) 1987

14.2. UN proper shipping name
Proper shipping name (ADR/RID) ALCOHOLS, N.O.S. (methanol)
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 3
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 III
IMDG packing group III
ADN packing group III
ICAO 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 •3Y
Hazard Identification Number (ADR/RID) 30
Tunnel restriction code (D/E)

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

SECTION 15: Regulatory information

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


EU legislation


15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Classification procedures according to Regulation (EC) 1272/2008


Revision comments

Classification modification.

Revision date: 27/09/2016
Revision: 8
Supersedes date: 18/06/2015
SDS number: 813

Risk phrases in full

R10 Flammable.
R11 Highly flammable.
R20 Harmful by inhalation.
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

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.
H370 Causes damage to organs (Eyes, Central nervous system).

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.