

SAFETY DATA SHEET**Malachite Green**

According to Regulation (EC) No 1907/2006, Annex II, as amended.

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product name Malachite Green
Product number PL.7030, PL.7030/25, PL.7030/100, PL.7031, PL.7032

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 Not Classified
Environmental hazards Aquatic Chronic 3 - H412

Classification (67/548/EEC or 1999/45/EC) R52/53, R10

2.2. Label elements**Pictogram**

Signal word Warning
Hazard statements H226 Flammable liquid and vapour.
H412 Harmful to aquatic life with long lasting effects.

Malachite Green

Precautionary statements P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.
 P501 Dispose of contents/ container in accordance with national regulations.

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

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

| | |
|--|----------------------|
| ethanol | 10 - <25% |
| CAS number: 64-17-5 | EC number: 200-578-6 |
| Substance with National workplace exposure limits. | |

| | |
|-----------------------|--|
| Classification | Classification (67/548/EEC or 1999/45/EC) |
| Flam. Liq. 2 - H225 | F; R11 |

| | | |
|---------------------|----------------------|--|
| methanol | 1 - <2.5% | |
| CAS number: 67-56-1 | EC number: 200-659-6 | REACH registration number: 01-2119433307-44-XXXX |

| | |
|-----------------------|--|
| Classification | Classification (67/548/EEC or 1999/45/EC) |
| Flam. Liq. 2 - H225 | F; R11. T; R23/24/25, R39/23/24/25 |
| Acute Tox. 3 - H301 | |
| Acute Tox. 3 - H311 | |
| Acute Tox. 3 - H331 | |
| STOT SE 1 - H370 | |

| | |
|--------------------------------|------------------------|
| malachite green oxalate | 0.25 - <0.5% |
| CAS number: 2437-29-8 | EC number: 219-441-7 |
| M factor (Acute) = 1 | M factor (Chronic) = 1 |

| | |
|--------------------------|--|
| Classification | Classification (67/548/EEC or 1999/45/EC) |
| Acute Tox. 3 - H301 | Xn; R22. Xi; R41. Repr. Cat. 3 R63. N; R50/53 |
| Eye Dam. 1 - H318 | |
| Repr. 2 - H361d | |
| Aquatic Acute 1 - H400 | |
| Aquatic Chronic 1 - H410 | |

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

Malachite Green

4.1. Description of first aid measures

| | |
|----------------------------|--|
| General information | Keep affected person away from heat, sparks and flames. |
| Inhalation | Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if symptoms are severe or persist. |
| 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 | If large concentrations are inhaled: Dizziness. Drowsiness. |
| 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. Keep unnecessary and unprotected personnel away from the spillage. Treat the spilled material according to the instructions in the clean-up section. |
|-----------------------------|---|

6.2. Environmental precautions

Malachite Green

Environmental precautions Avoid discharge into drains or watercourses or onto the ground. Contain spillage with sand, earth or other suitable non-combustible material. The product contains substances which are water-soluble and may spread in water systems. The product contains volatile substances which may spread in the atmosphere.

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

ethanol

Long-term exposure limit (8-hour TWA): WEL 1000 ppm 1920 mg/m³

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.

Malachite Green

| | |
|---------------------------------------|--|
| 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. |

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

| | |
|---|---|
| Appearance | Liquid. |
| Colour | Green. |
| Odour | Alcoholic. |
| pH | Not relevant. |
| Melting point | Not relevant. |
| Initial boiling point and range | 78 - 100°C @ 1013 hPa |
| Flash point | ~ 45°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 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. |

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. |
|-------------------|--|

Malachite Green

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

Acute toxicity - oral

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

ATE oral (mg/kg) 15,831.93964289

Acute toxicity - dermal

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

ATE dermal (mg/kg) 20,568.5137192

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

ATE inhalation (gases ppm) 47,993.19867813

ATE inhalation (vapours mg/l) 205.68513719

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.

Malachite Green

Specific target organ toxicity - single exposure

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

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.

ethanol

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 10,470.0

Species Rat

Notes (oral LD₅₀) REACH dossier information. Based on available data the classification criteria are not met.

ATE oral (mg/kg) 10,470.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 124.7

Species Rat

Notes (inhalation LC₅₀) REACH dossier information. Based on available data the classification criteria are not met.

ATE inhalation (vapours mg/l) 124.7

Skin corrosion/irritation

Animal data Dose: 0.2 ml, 24 hours, Rabbit Primary dermal irritation index: 0 / 8 REACH dossier information. Not irritating.

Skin sensitisation

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

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: 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.

Carcinogenicity

IARC carcinogenicity IARC Group 1 Carcinogenic to humans.

Reproductive toxicity

Reproductive toxicity - fertility Two-generation study - NOAEL 15 %, Oral, Mouse P REACH dossier information.

Malachite Green

Reproductive toxicity - development Maternal toxicity: - NOAEL: 16000 ppm, Inhalation, Rat REACH dossier information.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure LOAEL 4 mL/Kg, Oral, Rat REACH dossier information. Based on available data the classification criteria are not met.

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) 300.0

Acute toxicity - dermal

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

ATE dermal (mg/kg) 300.0

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.

Specific target organ toxicity - single exposure

STOT - single exposure STOT SE 1 - H370

Target organs Eyes Central nervous system

malachite green oxalate

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 275.0

Species Rat

Notes (oral LD₅₀) Raw material suppliers' information.

ATE oral (mg/kg) 275.0

Malachite Green

Serious eye damage/irritation

Serious eye damage/irritation Eye Dam. 1 - H318 Causes serious eye damage.

Reproductive toxicity

Reproductive toxicity - development Repr. 2 - H361d Suspected of damaging the unborn child.

SECTION 12: Ecological Information

12.1. Toxicity

Toxicity Aquatic Chronic 3 - H412 Harmful to aquatic life with long lasting effects.

Ecological information on ingredients.

ethanol

Acute toxicity - fish LC₅₀, 96 hours: 14200 mg/l, Pimephales promelas (Fat-head Minnow)
REACH dossier information.

Acute toxicity - aquatic invertebrates LC₅₀, 48 hours: 5012 mg/l, Ceriodaphnia dubia
REACH dossier information.

Acute toxicity - aquatic plants EC₅₀, 72 hours: 11.5 mg/l, Chlorella vulgaris
REACH dossier information.

Chronic toxicity - aquatic invertebrates NOEC, 9 days: 9.6 mg/l, Daphnia magna
REACH dossier information.

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.

malachite green oxalate

Toxicity Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410 Very toxic to aquatic life with long lasting effects.

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

Chronic aquatic toxicity

M factor (Chronic) 1

12.2. Persistence and degradability

Malachite Green

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.

ethanol

Biodegradation Water - Degradation (74%): 10 days
REACH dossier information.
The substance is readily biodegradable.

Chemical oxygen demand 1.99 g O₂/g substance REACH dossier information.

methanol

Phototransformation Water - DT₅₀ : 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.

ethanol

Partition coefficient log Pow: - 0.35 REACH dossier information.

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.

ethanol

Surface tension 24.5 mN/m @ 20°C/68°F REACH dossier information.

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

Malachite Green

Other adverse effects Not relevant.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Confirm disposal procedures with environmental engineer and local regulations. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out.

Disposal methods Do not empty into drains. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Collect and place in suitable waste disposal containers and seal securely. Dispose of contents/container in accordance with national regulations.

SECTION 14: Transport information

14.1. UN number

| | |
|------------------|------|
| UN No. (ADR/RID) | 1993 |
| UN No. (IMDG) | 1993 |
| UN No. (ICAO) | 1993 |
| UN No. (ADN) | 1993 |

14.2. UN proper shipping name

| | |
|--------------------------------|------------------------------------|
| Proper shipping name (ADR/RID) | FLAMMABLE LIQUID, N.O.S. (ethanol) |
| Proper shipping name (IMDG) | FLAMMABLE LIQUID, N.O.S. (ethanol) |
| Proper shipping name (ICAO) | FLAMMABLE LIQUID, N.O.S. (ethanol) |
| Proper shipping name (ADN) | FLAMMABLE LIQUID, N.O.S. (ethanol) |

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 |

Malachite Green

ICAO packing group III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

EmS F-E, S-E

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

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.

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).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

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 Flam. Liq. 3 - H226: Expert judgement. Aquatic Chronic 3 - H412: Calculation method.

Revision comments Classification according to EC 1272/2008 (CLP).

Revision date 27/09/2016

Revision 7

Supersedes date 09/04/2015

SDS number 809

Malachite Green

Risk phrases in full

R10 Flammable.
R11 Highly flammable.
R22 Harmful if swallowed.
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.
R41 Risk of serious damage to eyes.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R63 Possible risk of harm to the unborn child.

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.
H318 Causes serious eye damage.
H331 Toxic if inhaled.
H361d Suspected of damaging the unborn child.
H370 Causes damage to organs (Eyes, Central nervous system).
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

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.