

Methylene blue

Safety Data Sheet

255416

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Issue date: 13/09/2011 Revision date 14/06/2021
Supersedes 06/01/2017

Version: 3.0

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

1.1. Product identifier

Product form : Substance
Substance name : Methylene blue
EC-No. : 200-515-2
CAS-No. : 122965-43-9
Product code : 255416
Type of product : Colouring agents
Formula : $C_{16}H_{18}ClN_3S \cdot xH_2O$
Synonyms : basic blue 9, Methylthionine chloride
Product group : Raw material

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

1.2.1. Relevant identified uses

Main use category : Professional use, Pharmaceutical industry
Function or use category : Raw material

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier

Duchefa Farma BV
A. Hofmanweg 71
2031BH Haarlem - The Netherlands
T +31(0)23-5319093
farma@duchefa.nl - www.duchefa-farma.com

1.4. Emergency telephone number

Emergency number : Supplier contact information:
+31(0)23-5319093 (M-F 09:00-17:00)
+31(0)6-30109355 (outside office hours)

| Organisation/Company | Address | Comment |
|--|---------------------------------|---------|
| Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust | Avonley Road SE14 5ER London | |

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (oral), Category 4 H302
Serious eye damage/eye irritation, Category 2 H319

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Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP] Exact labelling to display (Hazard classification(s) to display)

Hazard pictograms (CLP) : 
GHS07

Signal word (CLP) : Warning

Hazard statements (CLP) : H302 - Harmful if swallowed.
H319 - Causes serious eye irritation.

Precautionary statements (CLP) : P280 - Wear eye protection, face protection, face shield, protective clothing, protective gloves.
P301+P312 - IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330 - Rinse mouth.
P305+P351 - IF IN EYES: Rinse cautiously with water for several minutes.
P337+P313 - If eye irritation persists: Get medical advice/attention.

2.3. Other hazards

Other hazards not contributing to the classification : No additional information available.

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|----------------|---|-----|---|
| Methylene blue | (CAS-No.) 122965-43-9 (EC-No.) 200-515-2 | 100 | Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 |

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|---|
| First-aid measures general | : If possible show this sheet, if not available show packaging or label. |
| First-aid measures after inhalation | : Remove person to fresh air and keep comfortable for breathing. Seek medical attention immediately. |
| First-aid measures after skin contact | : If skin irritation occurs: Get medical advice/attention. Rinse with plenty of water. |
| First-aid measures after eye contact | : Rinse cautiously with water for several minutes. If eye irritation persists: Get medical advice/attention. |
| First-aid measures after ingestion | : Rinse mouth. Immediately call a POISON CENTER/doctor. |

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

| | |
|----------------------------------|--|
| Symptoms/effects | : Irritating to the skin and mucous membranes. |
| Symptoms/effects after ingestion | : Vomiting. Diarrhea. |

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

No additional information available

SECTION 5: Firefighting measures**5.1. Extinguishing media**

| | |
|--------------------------------|--|
| Suitable extinguishing media | : Water spray dry chemical powder, alcohol-resistant foam, carbon dioxide (CO ₂). |
| Unsuitable extinguishing media | : Do not use a heavy water stream. |

5.2. Special hazards arising from the substance or mixture

| | |
|--|--|
| Fire hazard | : No fire hazard. |
| Explosion hazard | : Product is not explosive. |
| Hazardous decomposition products in case of fire | : On burning: release of harmful/irritant gases/vapours e.g.: carbon monoxide - carbon dioxide. |

5.3. Advice for firefighters

| | |
|--------------------------------|---|
| Firefighting instructions | : Exercise caution when fighting any chemical fire. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. |

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

| | |
|------------------|-----------------------------------|
| General measures | : Evacuate unnecessary personnel. |
|------------------|-----------------------------------|

6.1.1. For non-emergency personnel

| | |
|----------------------|--|
| Protective equipment | : Use the personal protective equipment as indicated in chapter 8. |
| Emergency procedures | : Avoid contact with skin, eyes and clothing. |

6.1.2. For emergency responders

| | |
|----------------------|-------------------------------------|
| Protective equipment | : Wear proper protective equipment. |
|----------------------|-------------------------------------|

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6.2. Environmental precautions

Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

For containment : Sweeping or shovelling without dust for disposal.

Methods for cleaning up : Hose down area with water.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Precautions for safe handling : Avoid raising dust. Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in dry, well-ventilated area

Keep container tightly closed.

Protect from moisture.

Storage temperature : 15 - 25 °C

7.3. Specific end use(s)

Pharmaceutical industry. Laboratory chemicals.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters**

No additional information available

8.2. Exposure controls**Appropriate engineering controls:**

Technical measures and appropriate working operations should have priority over the use of personal protective equipment.

Hand protection:

| Type | Material | Permeation | Thickness (mm) | Standard |
|--------|----------------------|-------------------|----------------|------------|
| Gloves | Nitrile rubber (NBR) | 6 (> 480 minutes) | 0,11 | EN ISO 374 |

Eye protection:

Safety glasses (to European standard EN 166 or equivalent)

Skin and body protection:

Protective clothing (with elasticated cuffs and closed neck). The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection:

Dustmask with filtertype P2

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

| | |
|---|--|
| Physical state | : Solid |
| Appearance | : Crystalline powder. |
| Molecular mass | : 319.9 g/mol |
| Colour | : Blue dark green Metallic. |
| Odour | : odourless. detectable. |
| Odour threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : 190 °C |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : 190 °C |
| Flammability (solid, gas) | : No data available |
| Vapour pressure | : No data available |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : No data available |
| Solubility | : Slightly soluble in water and ethanol. |
| Log Pow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity**10.1. Reactivity**

Stable under normal conditions.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Bases

Reducing agents

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Oxidizing agents.

10.6. Hazardous decomposition products

Chlorine

Nitrogen oxides

Sulphur oxides

release of harmful/irritant gases/vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed.

| Methylene blue (122965-43-9) | |
|------------------------------|------------------|
| LD50 oral rat | 1180 mg/kg |
| LD50 oral | 3500 mg/kg mouse |

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : There are no available data for a classification.

12.2. Persistence and degradability

| Methylene blue (122965-43-9) | |
|-------------------------------|---|
| Persistence and degradability | Biodegradability in water: no data available. |

12.3. Bioaccumulative potential

| Methylene blue (122965-43-9) | |
|------------------------------|------------------------------------|
| Bioaccumulative potential | No bioaccumulation data available. |

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : There are no available data for a classification.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Waste treatment methods : Avoid release to the environment.

Product/Packaging disposal recommendations : Dispose of this material and its container at hazardous or special waste collection point.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

| ADR | IATA |
|---|------------------------------------|
| 14.1. UN number | |
| Not applicable | Not applicable |
| 14.2. UN proper shipping name | |
| Not applicable | Not applicable |
| 14.3. Transport hazard class(es) | |
| Not applicable | Not applicable |
| Not applicable | Not applicable |
| 14.4. Packing group | |
| Not applicable | Not applicable |
| 14.5. Environmental hazards | |
| Dangerous for the environment : No | Dangerous for the environment : No |
| No supplementary information available | |

14.6. Special precautions for user**- Overland transport**

No data available

- Air transport

No data available

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

Not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****15.1.1. EU-Regulations**

No REACH Annex XVII restrictions

Methylene blue is not on the REACH Candidate List

Methylene blue is not on the REACH Annex XIV List

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

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SECTION 16: Other information

Indication of changes:

| | | | |
|-----|---|----------|------|
| | Type of product | Added | |
| 1.1 | CAS-No. | Modified | |
| 1.2 | Main use category | Modified | |
| 2.1 | Classification according to Regulation (EC) No. 1272/2008 [CLP] | Added | H319 |
| 2.2 | Precautionary statements (CLP) | Modified | |
| 4.2 | Chronic symptoms | Removed | |
| 5.2 | Hazardous decomposition products in case of fire | Added | |
| 7.2 | Maximum storage period | Removed | |
| 7.3 | Specific end uses | Added | |
| 8.2 | Appropriate engineering controls | Added | |

Full text of H- and EUH-statements:

| | |
|---------------------|---|
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| H302 | Harmful if swallowed. |
| H319 | Causes serious eye irritation. |

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.