

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

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

### 1.1 Product identifier

Trade name/designation:	Methylene blue, tablets for milk analysis
Product No.:	33073
CAS No.:	61-73-4
Index No.:	000-000-00-0
EU REACH No.:	A registration number is not available for this substance as the substance or its use is exempted from registration according to REACH Article 2 or the annual tonnage does not require a registration.
Other means of identification:	3,7-Bis(dimethylamino)phenothiazin-5-ium chloride, Methylthioninium chloride

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

Relevant identified uses:	General chemical reagent
Uses advised against:	The product, as such or as a component of a mixture, is not intended to be used by consumers (as defined by the REACH Regulation).

### 1.3 Details of the supplier of the safety data sheet

#### *Ireland*

#### **VWR International Ltd.**

Street	Orion Business Campus, Northwest Business Park
Postal code/City	Ballycoolin, Dublin 15, Republic of Ireland
Telephone	+353 1 8822222
Telefax	+353 1 8822333
E-mail (competent person)	SDS@avantorsciences.com

### 1.4 Emergency phone number

Telephone	+44 (0) 1270 502894 (CareChem24)
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## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

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

Hazard classes and hazard categories	Hazard statements
Acute toxicity, category 4, oral	H302
Skin irritation, category 2	H315
Eye irritation, category 2	H319
Specific target organ toxicity (single exposure), category 3, Respiratory tract irritation	H335

### 2.2 Label elements

#### 2.2.1 Labelling according to Regulation (EC) No. 1272/2008 [CLP]

##### Hazard pictograms



Signal word: Warning

Hazard statements	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Precautionary statements	
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

### 2.3 Other hazards

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

This product does not contain a substance that has endocrine disrupting properties.

## SECTION 3: Composition / information on ingredients

### 3.1 Substances

Substance name: Methylene blue  
Molecular formula: C<sub>16</sub>H<sub>18</sub>ClN<sub>3</sub>S

Molecular weight:	319.86 g/mol
CAS No.:	61-73-4
EU REACH registration No.:	A registration number is not available for this substance as the substance or its use is exempted from registration according to REACH Article 2 or the annual tonnage does not require a registration.
EC No.:	200-515-2
ATE, SCL and/or M-factor:	none

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General information

no data available

#### After inhalation

Remove casualty to fresh air and keep warm and at rest. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of respiratory tract irritation, consult a physician. If breathing is irregular or stopped, administer artificial respiration.

#### In case of skin contact

Remove contaminated, saturated clothing immediately. Remove mechanically with textile material or cellulose (whatever available material) and then rinse skin with large amounts of water (strong water jet, flood shower). Get medical help.

#### After eye contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. Remove contact lenses, if present and easy to do. Continue rinsing.

#### In case of ingestion

Never give anything by mouth to an unconscious person or a person with cramps. Rinse mouth thoroughly with water. Spit out all liquid. Do NOT induce vomiting. Administration of activated charcoal (3 tablespoons of activated charcoal suspended in 1 glass of water). Seek medical advice immediately.

#### Self-protection of the first aider

First aider: Pay attention to self-protection! Wear personal protection equipment (refer to section 8).

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

After inhalation: Shortness of breath. Cough. After skin contact: Erythema (Redness). After eye contact: Conjunctival oedema (chemosis). Inflammation and corneal changes. After ingestion: Nausea. Abdominal pain. Vomiting.

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

After inhalation: Treat symptomatically. After skin contact: Wash with plenty of soap and water. If necessary, treat skin irritations with a dermatocorticoid foam. After eye contact: Rinse immediately carefully and thoroughly with eye-bath or water. Treat symptomatically. After ingestion: Administration of activated charcoal (3 tablespoons of activated charcoal suspended in 1 glass of water).

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

ABC-powder  
Carbon dioxide (CO<sub>2</sub>).  
Dry sand  
Nitrogen

#### Extinguishing media which must not be used for safety reasons

Water spray.  
Full water jet

### 5.2 Special hazards arising from the substance or mixture

Combustible substance.  
This material is combustible, but will not ignite readily.  
Fire may produce irritating, corrosive and/or toxic gases.  
In case of fire may be liberated:  
Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>).  
Hydrogen chloride (HCl)  
Nitrogen oxides (NO<sub>x</sub>)  
Sulphur oxides

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.  
Special protective equipment for firefighters:  
Wear a self-contained breathing apparatus and chemical protective clothing.  
Co-ordinate fire-fighting measures to the fire surroundings.  
In case of fire: Evacuate area.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Use personal protective equipment as required. Do not breathe dust. Use a dust mask if there is a lot of dust. Avoid substance contact. Remove victim out of the danger area. Remove victim to fresh air and keep at rest in a position comfortable for breathing.

### 6.2 Environmental precautions

Avoid release to the environment.

### 6.3 Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal. Rinse affected areas with water. Avoid dust formation.  
Dispose according to local legislation.

### 6.4 Reference to other sections

Personal protection equipment: see section 8 Disposal information: see section 13

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advices on safe handling

Use extractor hood (laboratory).

Use only in well-ventilated areas.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Avoid contact with eyes and skin.

Use personal protective equipment as required.

Measures to prevent fire, aerosol and dust generation

Usual measures for fire prevention.

Use only in well-ventilated areas.

Measures required to protect the environment

No special measures are necessary.

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

### 7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature: 15°C – 25°C or 30°C depending on climatic conditions.

Storage class: 10-13

Storage: Keep container tightly closed and in a well-ventilated place. Keep/Store only in original container. Suitable container/equipment material: Glass Polyethylene (PE) Unsuitable container/equipment material: No further relevant information available.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Does not contain substances above concentration limits fixing an occupational exposure limit.

#### Recommended monitoring procedures:

European Standard EN 14042 (Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents)

European Standard EN 482 (Workplace exposure. Procedures for the determination of the concentration of chemical agents - Basic performance requirements)

### 8.2 Exposure controls

#### 8.2.1 Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

### 8.2.2 Personal protection equipment

Wear suitable protective clothing. When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn.

#### *Eye/face protection*

Eye glasses with side protection DIN-/EN-Norms EN 166

Recommendation: VWR 111-0432

#### *Skin protection*

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits.

Recommended glove articles DIN-/EN-Norms EN ISO 374 In the case of wanting to use the gloves again, clean them before taking off and air them well.

#### By short-term hand contact

Suitable material:	NBR (Nitrile rubber)
Thickness of the glove material:	0,12 mm
Breakthrough time:	> 480 min
Recommended glove articles:	VWR 112-0998

#### By long-term hand contact

Suitable material:	NBR (Nitrile rubber)
Thickness of the glove material:	0,38 mm
Breakthrough time:	> 480 min
Recommended glove articles:	VWR 112-3717 / 112-1381

#### *Respiratory protection*

Usually no personal respirative protection necessary. Required when dusts are generated. Generation/formation of dust

Suitable respiratory protection apparatus:	Filtering Half-face mask (EN 149)
Recommendation:	VWR 111-0451
Suitable material:	P3
Recommendation:	VWR 111-0244

#### *Additional information*

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

### 8.2.3 Environmental exposure controls

no data available

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance	
Physical state:	solid
Colour:	dark green
Odour:	no data available

#### Safety relevant basic data

pH:	3 (10 g/l; H <sub>2</sub> O; 20 °C)
Melting point/freezing point:	180 °C
Initial boiling point and boiling range:	no data available
Flash point:	no data available
Flammability:	Not applicable
Lower and upper explosion limit	
Lower explosion limit:	no data available
Upper explosion limit:	no data available
Vapour pressure:	no data available
Relative vapour density:	no data available
Density and/or relative density	
Density:	1.757 g/cm <sup>3</sup> (22 °C)
Solubility(ies)	
Water solubility:	soluble (20 °C)
Partition coefficient: n-octanol/water:	no data available
Auto-ignition temperature:	no data available
Decomposition temperature:	Not applicable
Viscosity	
Kinematic viscosity:	no data available
Dynamic viscosity:	no data available
Particle characteristics:	no nanoform

### 9.2 Other information

Evaporation rate:	no data available
Explosive properties:	no data available
Oxidising properties:	Not applicable
Bulk density:	no data available
Refraction index:	no data available
Dissociation constant:	no data available
Surface tension:	no data available
Henry's Law Constant:	no data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is non-reactive under normal conditions.

## 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

## 10.3 Possibility of hazardous reactions

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

## 10.4 Conditions to avoid

No further relevant information available.

## 10.5 Incompatible materials:

No further relevant information available.

## 10.6 Hazardous decomposition products

No known hazardous decomposition products.

Decomposition products in case of fire: see section 5.

# SECTION 11: Toxicological information

## 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

### Acute effects

#### *Acute oral toxicity:*

Harmful if swallowed.

LD50: > 1180 mg/kg - Rat - (RTECS)

#### *Acute dermal toxicity:*

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

#### *Acute inhalation toxicity:*

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

### Irritant and corrosive effects:

#### *Primary irritation to the skin:*

Causes skin irritation.

#### *Irritation to eyes:*

Causes serious eye irritation.

#### *Irritation to respiratory tract:*

May cause respiratory irritation.



**Respiratory or skin sensitisation**

In case of skin contact: not sensitising

After inhalation: not sensitising

**STOT-single exposure**

May cause respiratory irritation.

**STOT-repeated exposure**

Not applicable

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)****Carcinogenicity**

No indication of human carcinogenicity.

**Germ cell mutagenicity**

No indications of human germ cell mutagenicity exist.

**Reproductive toxicity**

No indications of human reproductive toxicity exist.

**Aspiration hazard**

Not applicable

**Other adverse effects**

no data available

**Additional information**

no data available

**11.2 Information on other hazards**

This substance does not have endocrine disrupting properties with respect to humans.

**SECTION 12: Ecological information****12.1 Toxicity****Fish toxicity:**

no data available

**Daphnia toxicity:**

no data available

**Algae toxicity:**

no data available

**Bacteria toxicity:**

no data available

**12.2 Persistence and degradability**

no data available

### 12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water: no data available

### 12.4 Mobility in soil:

no data available

### 12.5 Results of PBT/vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

### 12.6 Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to the environment.

### 12.7 Other adverse effects

no data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Appropriate disposal / Product

Dispose according to local legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: no data available

#### Appropriate disposal / Package

Dispose according to local legislation. Handle contaminated packages in the same way as the substance itself.

#### Additional information

European waste management legislation

Directive 2008/98/EC (Waste Framework Directive)

National waste management legislation

Act No. 10/1996 - Waste Management Act, 1996

Act No. 36/2001 - Waste Management (Amendment) Act, 2001

## SECTION 14: Transport information

### Land transport (ADR/RID)

14.1	UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2	UN proper shipping name:	not assigned
14.3	Transport hazard class(es):	none
14.4	Packing group:	not assigned
14.5	Environmental hazards:	none
14.6	Special precautions for user:	none

## Sea transport (IMDG)

14.1	UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2	UN proper shipping name:	not assigned
14.3	Transport hazard class(es):	none
14.4	Packing group:	not assigned
14.5	Environmental hazards:	none
14.6	Special precautions for user:	none
14.7	Maritime transport in bulk according to IMO instruments	not relevant

## Air transport (ICAO-TI / IATA-DGR)

14.1	UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2	UN proper shipping name:	not assigned
14.3	Transport hazard class(es):	none
14.4	Packing group:	not assigned
14.5	Special precautions for user:	none

## SECTION 15: Regulatory information

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

#### EU legislation

- 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), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (Text with EEA relevance)
- 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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance)
- Commission Regulation (EU) 2020/878 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

#### National regulations

no data available

Water hazard class: hazardous to water (WGK 2)

### 15.2 Chemical Safety Assessment

For this substance a chemical safety assessment has not been carried out.

## SECTION 16: Other information

### Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists  
 ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road  
 AGS - Committee on Hazardous Substances (Ausschuss für Gefahrstoffe)  
 CLP - Regulation on Classification, Labelling and Packaging of Substances and Mixtures  
 DFG - German Research Foundation (Deutsche Forschungsgemeinschaft)  
 DNEL - Derived No Effect Level  
 Gestis - Information system on hazardous substances of the German Social Accident Insurance (Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung)  
 IATA-DGR - International Air Transport Association-Dangerous Goods Regulations  
 ICAO-TI - International Civil Aviation Organization-Technical Instructions  
 IMDG - International Maritime Code for Dangerous Goods  
 KOSHA - Korea Occupational Safety and Health Agency  
 LTV - Long Term Value  
 NIOSH - National Institute for Occupational Safety and Health  
 OSHA - Occupational Safety & Health Administration  
 PBT - Persistent, Bioaccumulative and Toxic  
 PNEC - Predicted No Effect Concentration  
 RID - Regulation concerning the International Carriage of Dangerous Goods by Rail  
 STV - Short Term Value  
 SVHC - Substances of Very High Concern  
 vPvB - very Persistent, very Bioaccumulative

Training advice: Provide adequate information, instruction and training for operators.

### Key literature references and sources for data

This Safety Data Sheet has been prepared based on information available for public as TOXNET information, European Chemicals Agency (ECHA) substance dossier, papers from international cancer research institutes (IARC Monographs), U.S. National Toxicology Program data, U.S. Agency for Toxic Substances and Disease Control (ATSDR), PubChem websites and SDS from our raw material manufacturers.

### Additional information

Indication of changes                      Section 11

If you need an explanation of the change, contact the supplier (SDS@avantorsciences.com).

*The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.*