

SDS no. 0NM4DJUP • Version 1.0 • Date of issue: 2024-10-14

GHS Product identifier

Product name METHYLENE BLUE Solution

Product	Product Code
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METHYLENE BLUE 0.1% Solution	AMB01
METHYLENE BLUE 0.2% Solution	AMB02
METHYLENE BLUE 1% Solution	AMB1

Product type: Water solution of methylene blue.

Microbiology stain.

Supplier's details

Name	ChemSupply Australia Pty Ltd
Address	38-50 Bedford Street 5013 Gillman South Australia Australia

Telephone 08 8440 2000
email www.chemsupply.com

National contact

Name	Australian Biostain Pty Ltd
Address	16 Shipwright Road 5016 Largs North SA Australia

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

Classification of the substance or mixture

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GHS classification in accordance with: UN GHS revision 7

- Serious eye damage/eye irritation, Cat. 2A
- Flammable liquids, Cat. 3

GHS label elements, including precautionary statements

Pictograms



Signal word

Warning

Hazard statement(s)

H226
H319

Flammable liquid and vapor
Causes serious eye irritation

Precautionary statement(s)

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

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P264 Wash hands thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

P370+P378 In case of fire: Use agents recommended in Section 5 of SDS for extinction

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

P501 Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Components

Component	CAS no.	Concentration
Water (EC no.: 231-791-2)	7732-18-5	>= 89 % (volume)
CLASSIFICATIONS: No data available. HAZARDS: No data available.		
Ethanol (EC no.: 200-578-6; Index no.: 603-002-00-5)	64-17-5	<= 5 % (volume)
CLASSIFICATIONS: Flammable liquids, Cat. 2; Serious eye damage/eye irritation, Cat. 2A. HAZARDS: H225 - Highly flammable liquid and vapor; H319 - Causes serious eye irritation.		
Acetone (EC no.: 200-662-2; Index no.: 606-001-00-8)	67-64-1	<= 5 % (volume)
CLASSIFICATIONS: Flammable liquids, Cat. 2; Specific target organ toxicity following single exposure, Cat. 3; Serious eye damage/eye irritation, Cat. 2A. HAZARDS: H225 - Highly flammable liquid and vapor; H319 - Causes serious eye irritation; H336 - May cause drowsiness or dizziness.		
Methylene Blue anhydrous (EC no.: 200-515-2)	61-73-4	<= 1 % (weight)

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CLASSIFICATIONS: Acute toxicity, oral, Cat. 4. HAZARDS: H302 - Harmful if swallowed.

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain in work area.
If inhaled	Inhalation of any vapours from this product is not likely to present an acute hazard.
In case of skin contact	Irritation unlikely. If irritation occurs wash with plenty of soap and water.
In case of eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary

For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Use fire extinguishing media appropriate for surrounding environment. Use water spray, dry chemical, carbon dioxide, or appropriate foam. This material is substantially water.

Specific hazards arising from the chemical

Hazards from Combustion Products: Only small quantities of decomposition products are expected from this product at temperatures normally achieved in a fire. This will only occur after heating to dryness.

Ethanol: Carbon oxides

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. For personal protection see section 8.

Methods and materials for containment and cleaning up

Absorb or contain liquid with sand, earth or spill control material. Shovel up using non sparking tools and place in a labelled, sealable container for subsequent safe disposal. Put leaking containers in a labelled drum or overdrum.

SECTION 7: Handling and storage

Precautions for safe handling

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Avoid fumes.
Wear Safety glasses, gloves and protective apron.
Work in an area of good ventilation, an approved fume cupboard is preferred.

Conditions for safe storage, including any incompatibilities

Keep material away from sparks, flames and other ignition sources. Keep container tightly closed when Handling not in use. No smoking.
Avoid prolonged or repeated contact with skin, eyes and clothing .

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: 64-17-5

Ethanol

AU/SWA (Australia): 1000 ppm; 1890 mg/m³ TWA inhalation;

CAS: 67-64-1

Acetone

AU/SWA (Australia): 1000 ppm; 2375 mg/m³ STEL inhalation; 500 ppm; 1185 mg/m³ TWA inhalation;

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection

Footwear: Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection: Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state

Liquid

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Appearance	Dark blue liquid.
Color	Dark Blue
Odor	Faint ethanolic.
Odor threshold	No data available.
Melting point/freezing point	No data available.
Boiling point or initial boiling point and boiling range	No data available.
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	29C
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	No data available.
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Completely.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	No data available.
Evaporation rate	No data available.
Density and/or relative density	~ 1
Relative vapor density	No data available.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

No data available.

SECTION 10: Stability and reactivity

Reactivity

Stable under normal conditions of storage and handling.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Hazardous Polymerization: Will not occur.

Conditions to avoid

Avoid storing in direct sunlight and avoid extremes of temperature.

Heat, flames and sparks.

Incompatible materials

Metals.

Acetone: Bases, Oxidizing agents, Reducing agents, Acetone reacts violently with phosphorous oxychloride.

Ethanol: Alkali metals, Oxidizing agents, Peroxides

Hazardous decomposition products

Water: In the event of fire: see section 5

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Ingestion: Significant oral exposure is considered to be unlikely and is unlikely to cause any irritation problems in the short or long term.

Inhalation: Unlikely to cause any irritation or discomfort.

Ethanol: ACGIH: A3 Confirmed animal carcinogen with unknown relevance to humans.

Skin corrosion/irritation

No adverse effects expected. However will stain the skin, and the stain may be difficult to remove, but should not cause any adverse health effects.

Serious eye damage/irritation

May be mildly irritating to the eyes.

Respiratory or skin sensitization

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

Specific target organ toxicity (STOT) - single exposure

Not classified based on available information.

Specific target organ toxicity (STOT) - repeated exposure

Not classified based on available information.

Aspiration hazard

Not classified based on available information.

Additional information

Methylene Blue anhydrous: cat LDLo intravenous 41mg/kg (41mg/kg) Annals of Internal Medicine. Vol. 7, Pg. 738, 1933.
dog LDLo intravenous 50mg/kg (50mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1366, 1935.
dog LDLo oral 500mg/kg (500mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1366, 1935.

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domestic animals - goat/sheep LD50 intravenous 42300ug/kg (42.3mg/kg) Journal of Veterinary Pharmacology and Therapeutics. Vol. 7, Pg. 225, 1984.

[Link to PubMed](#)

guinea pig LDLo subcutaneous 300mg/kg (300mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1366, 1935.

infant TDLo unreported 15mg/kg (15mg/kg) LUNGS, THORAX, OR RESPIRATION: CYANOSIS

BLOOD: OTHER CHANGES "Toxicology of Drugs and Chemicals," Deichmann, W.B., New York, Academic Press, Inc., 1969Vol. -, Pg. 390, 1969.

man TDLo subcutaneous 28uL/kg (0.028mL/kg) SKIN AND APPENDAGES (SKIN): "DERMATITIS, OTHER: AFTER SYSTEMIC EXPOSURE"

British Journal of Clinical Practice. Vol. 28, Pg. 289, 1974.

[Link to PubMed](#)

monkey LDLo intravenous 10mg/kg (10mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1366, 1935.

mouse LD50 intraperitoneal 150mg/kg (150mg/kg) National Technical Information Service. Vol. AD691-490,

mouse LD50 intravenous 77mg/kg (77mg/kg) Cesko-Slovenska Farmacie. Vol. 12, Pg. 94, 1963.

[Link to PubMed](#)

mouse LD50 oral 3500mg/kg (3500mg/kg) Cesko-Slovenska Farmacie. Vol. 12, Pg. 94, 1963.

[Link to PubMed](#)

rabbit LDLo oral 1gm/kg (1000mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1366, 1935.

rat LD50 intraperitoneal 180mg/kg (180mg/kg) Naunyn-Schmiedeberg's Archiv fuer Experimentelle Pathologie und Pharmakologie. Vol. 204, Pg. 288, 1947.

rat LD50 intravenous 1250mg/kg (1250mg/kg) Arzneimittel-Forschung. Drug Research. Vol. 18, Pg. 676, 1968.

[Link to PubMed](#)

rat LD50 oral 1180mg/kg (1180mg/kg) "Prehled Prumyslove Toxikologie; Organicke Latky," Marhold, J., Prague, Czechoslovakia, Avicenum, 1986Vol. -, Pg. 1334, 1986.

rat LD50 subcutaneous 190mg/kg (190mg/kg) Drugs in Japan Vol. -, Pg. 1185, 1990.

Acetone: *TOXICITY:

typ. dose mode specie amount units other

TCLo ihl man 440 ug/m3/6M

TCLo ihl man 10 mg/m3/6H

TCLo ihl hmh 500 ppm

TCLo ihl man 12000 ppm/4H

LDLo unr man 1159 mg/kg

LDLo ipr rat 500 mg/kg

LD50 orl mus 3000 mg/kg

LCLo ihl mus 110 gm/m3/1H

LD50 ipr mus 1297 mg/kg

LDLo orl dog 8 gm/kg

LD50 orl rat 5800 mg/kg

LC50 ihl rat 50100 mg/m3/8H

LDLo ipr dog 8 gm/kg

LDLo scu dog 5 gm/kg

LD50 skn rbt 20 gm/kg

LDLo scu gpg 5000 mg/kg

TDLo orl man 2857 mg/kg

LD50 ivn rat 5500 mg/kg

LDLo ivn rbt 1576 mg/kg

LD50 orl rbt 5340 mg/kg

LDLo ivn mus 4 gm/kg

*AQTX/TLM96: Not available

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*SAX TOXICITY EVALUATION:

THR: Moderately toxic by various routes. A skin and severe eye irritant. Human systemic effects by inhalation and ingestion. Narcotic in high concentrations. In industry, no injurious effects have been reported other than skin irritation resulting from its defatting action, or headache from prolonged inhalation. A common air contaminant. Dangerous disaster hazard due to fire and explosion hazard.

*CARCINOGENICITY: Not available

*MUTATION DATA:

test lowest dose | test lowest dose

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cyt-ham:fbr 40 gm/L | sln-smc 47600 ppm

*TERATOGENICITY:

Reproductive Effects Data:

TCLo: ihl-mam 31500 ug/m3/24H (1-13D preg)

*STANDARDS, REGULATIONS & RECOMMENDATIONS:

OSHA: Federal Register (1/19/89) and 29 CFR 1910.1000 Subpart Z

Transitional Limit: PEL-TWA 1000 ppm [015,327,545,610]

Final Limit: PEL-TWA 750 ppm; STEL 1000 ppm [015,327,545,610]

OSHA STEL does not apply to the acetate fiber industry; it is in effect for all other sectors [610]

ACGIH: TLV-TWA 750 ppm; STEL 1000 ppm [015,415,421,610]

NIOSH Criteria Document: Recommended exposure limit to this class of compounds-air: TWA 590 mg/m3 [015]

NFPA Hazard Rating: Health (H): 1

Flammability (F): 3

Reactivity (R): 0

H1: Materials only slightly hazardous to health (see NFPA for details).

F3: Materials which can be ignited under almost all normal temperature conditions (see NFPA for details).

R0: Materials which are normally stable even under fire exposure conditions and which are not reactive with water (see NFPA for details).

*OTHER TOXICITY DATA:

Skin and Eye Irritation Data:

eye-hmn 500 ppm

skn-rbt 395 mg open MLD

eye-rbt 3950 ug SEV

eye-rbt 20 mg/24H MOD

skn-rbt 500 mg/24H MLD

Standards and Regulations: DOT-Hazard: Flammable liquid; Label: Flammable liquid

Status: NIOSH Analytical Methods: see Ketones I, 1300

EPA TSCA Chemical Inventory, 1986

EPA TSCA Test Submission (TSCATS) Data Base, June 1988

EPA Genetox Program 1988, Negative: SHE-clonal assay; Cell transform.- mouse embryo

EPA Genetox Program 1988, Negative: Cell transform.-RLV F344 rat

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embryo
EPA Genetox Program 1988, Negative: In vitro cytogenetics-nonhuman
EPA Genetox Program 1988, Negative: Histidine reversion-Ames test; In vitro SCE-nonhuman
Meets criteria for proposed OSHA Medical Records Rule

Ethanol: Stomach - Irregularities - Based on Human Evidence

SECTION 12: Ecological information

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15: Regulatory information

SECTION 16: Other information

Further information/disclaimer

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)