Safety Data Sheet Mixed Indicator - Methyl Red & Methylene Blue

SDS no. 8X2LB1P8 • Version 1.0 • Date of issue: 2026-07-31

SECTION 1: Identification

GHS Product identifier

Product name	Mixed Indicator - Methyl Red & Methylene Blue
Product number	0879/

Recommended use of the chemical and restrictions on use

Laboratory Indicator

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.au

Emergency phone number

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

SECTION 2: Hazard identification

General hazard statement

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Serious eye damage/eye irritation, Cat. 2A
- Specific target organ toxicity following single exposure, Cat. 2
- Flammable liquids, Cat. 2

GHS label elements, including precautionary statements

Pictograms

Signal word **Warning**

Hazard statement(s)

H225	Highly flammable liquid and vapor
H303	May be harmful if swallowed
H319	Causes serious eye irritation
H333	May be harmful if inhaled
H371	May cause damage to organs

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.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physcian if you feel unwell,
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P312	IF INHALED: Call a POISON CENTER/doctor/physcian if you feel unwell.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P311	IF exposed or concerned: Call a POISON CENTER/doctor/physcian
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

Molecular weight	46.07

Various Denaturants used

Component	Identification	Weight %
Ethanol	CAS no.: 64-17-5 EC no.: 200-578-6 Index no.: 603-002-00-5	70 - <= 100 %
Water	CAS no.: 7732-18-5 EC no.: 231-791-2	<= 10 %
Methanol	CAS no.: 67-56-1 EC no.: 200-659-6 Index no.: 603-001-00-X	< 2.99 %
Methyl isobutyl ketone	CAS no.: 108-10-1 EC no.: 203-550-1 Index no.: 606-004-00-4	< 1 %
Fluorescein, disodium salt	CAS no.: 518-47-8 EC no.: 208-253-0	< 0.1 %

Component	Identification	Weight %
Benzenemethanaminium, n-[2-[(2,6-dimethylphenyl)amino]-2-oxoethyl]-N,N-diethyl-, benzoate (1:1)	CAS no.: 3734-33-6 EC no.: 223-095-2	< 0.1 %
Methylene blue anhydrous	CAS no.: 61-73-4 EC no.: 200-515-2	<= 0.05 %
Methyl red sodium salt	CAS no.: 845-10-3 EC no.: 212-682-9	<= 0.03 %

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain in work area.
If inhaled	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.
In case of skin contact	Rinse with plenty of water. Get medical attention if irritation develops and persists.
In case of eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.
If swallowed	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical advice

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
Caution: Use of water spray when fighting fire may be inefficient.
Small fire: Use foam, dry chemical, CO2 or water spray.
Large fire: Use foam, fog or water spray - Do not use water jets.
If safe to do so, move undamaged containers from fire area. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers. Alcohol resistant foam is a preferred firefighting medium, however if not available water spray can be used.

Specific hazards arising from the chemical
Hazards from Combustion Products: Carbon monoxide, carbon dioxide.
HIGHLY FLAMMABLE: These products have a low flash point - Will be easily ignited by heat, sparks or flames at ambient temperatures. Vapours will form explosive mixtures with air. Vapours will travel to source of ignition and flash back. Fire may produce irritating, poisonous and/or corrosive gases. Containers may explode when heated. Many liquids are lighter than water. Many vapours are heavier than air and will collect in low or confined areas (drains, basements, tanks). Vapours from run-off may create an explosion hazard.

Special protective actions for fire-fighters

SCBA and structural firefighter's uniform may provide limited protection. Fully-encapsulating, gas-tight suits should be worn for maximum protection.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

Methods and materials for containment and cleaning up
Spills & Disposal: ELIMINATE all ignition sources (no smoking, flares, sparks or flame) within at least 50m - All equipment used in handling the product must be earthed.
Do not touch or walk through spilled material.
Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas.
Vapour-suppressing foam may be used to control vapours.
Absorb spill with earth, sand or other non-combustible material - Use clean, non-sparking tools to collect material and place it in loosely-covered metal or plastic containers for later disposal. Water spray may be used to knock down or divert vapour clouds.
SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

SECTION 7: Handling and storage

Precautions for safe handling
Keep containers tightly sealed when not in use. Protect against physical damage. Keep away from incompatibles such as oxidizing agents, acids, alkalis. Keep away from heat and all sources of ignition - Do not smoke. Protect against electrostatic charges. Fumes can combine with air to form an explosive mixture. Containers should be bonded and grounded for transfers to avoid static sparks. Use non-sparking type tools and equipment, including explosion proof ventilation. All electrical equipment must be flameproofed. Containers of this material may be hazardous when empty since they retain product residues (vapours, liquid); observe all warnings and precautions listed for the product. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Ensure good ventilation/exhaustion at the workplace. DO NOT ingest. Do not breathe gas, fumes, vapour or spray. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. If ingested, seek medical advice immediately and show the container or the label. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Wash thoroughly after handling. Contaminated clothing should be removed and washed before re-use.

Conditions for safe storage, including any incompatibilities
Protect against physical damage. Store in a tightly closed container, in a cool, dry, well-ventilated area away from incompatible substances (oxidizing agents, acids). Keep well closed and protected from direct sunlight and moisture. Keep away from heat, sparks, flames and all sources of ignition - Do not smoke. Containers should be bonded and grounded for transfers to avoid static sparks. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapours, liquid); observe all warnings and precautions listed for the product. Outside or detached storage is preferred. Flammable materials should be stored in a separate safety storage cabinet or room. Store small containers in suitable flammable liquid storage cabinets when not in use. Larger drums (200l) must be kept in purpose-built stores.

Corrosiveness: Ethanol is not corrosive to cast iron, steel stainless steel, copper and its alloys, nickel and its alloys and aluminium. Ethanol may react with hot aluminum.

Storage Temperatures: Store at room temperature (15 to 25°C recommended).

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: 108-10-1
Methyl isobutyl ketone
AU/SWA (Australia): 75 ppm; 307 mg/m3 STEL inhalation; 50 ppm; 205 mg/m3 TWA inhalation

CAS: 64-17-5
Ethanol

AU/SWA (Australia): 1000 ppm; 1880 mg/m3 TWA inhalation [Ethyl alcohol]

CAS: 67-56-1

Methanol

AU/SWA (Australia): 250 ppm; 328 mg/m3 STEL inhalation [Methyl alcohol]; 200 ppm; 262 mg/m3 TWA inhalation [Methyl alcohol]

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.

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 and 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
Appearance, such as physical state and colour	
Colour	Deep blue
Odour	Ethereal vinous odour.
Odour threshold	Reported values vary widely; 49-716 ppm (geometric mean: 180 ppm) (detection); 100 ppm (recognition) (ethanol)
Melting point and freezing point	-117.3 °C (ethanol)
Boiling point or initial boiling point and boiling range	78.3 °C (ethanol)
Flammability	Highly Flammable
Lower and upper explosion limit or lower and upper flammability limit	Flammable Limits - Lower: 3.3% (ethanol) Flammable Limits - Upper: 19% (ethanol)

Flash point	13 °C (closed cup) (100% ethanol)
Explosive properties	Slightly explosive in presence of open flames and sparks, of acids. Ethanol has an explosive reaction with the oxidized coating around potassium metal. Ethanol ignites and then explodes on contact with acetic anhydride + sodium hydrosulfate (ignites and may explode), disulfuric acid + nitric acid, phosphorous(III) oxide platinum, potassium-tert-butoxide+ acids. Ethanol forms explosive products in reaction with the following compound : ammonia + silver nitrate (forms silver nitride and silver fulminate), iodine + phosphorus (forms ethane iodide), magnesium perchlorate (forms ethyl perchlorate), mercuric nitrate, nitric acid + silver (forms silver fulminate) silver nitrate (forms ethyl nitrate) silver(I) oxide + ammonia or hydrazine (forms silver nitride and silver fulminate), sodium (evolves hydrogen gas). Sodium Hydrazide + alcohol can produce an explosion. Alcohols should not be mixed with mercuric nitrate, as explosive mercuric fulminate may be formed. May form explosive mixture with manganese perchlorate + 2,2-dimethoxypropane. Addition of alcohols to highly concentrate hydrogen peroxide forms powerful explosives. Explodes on contact with calcium hypochlorite. Vapour may explode if ignited in an enclosed area. Containers may explode when heated or involved in a fire. (Ethyl alcohol 200 Proof)
Auto-ignition temperature	363 °C (100% ethanol); 423-425 °C (100% ethanol)
Decomposition temperature	n/a
pH	Ethanol is a very weak acid.
Kinematic viscosity	Kinematic Viscosity: 1.48-1.53 mm^2/s (1.48-1.53 centistokes) at 20 °C (calculated) (ethanol) [88] Dynamic Viscosity: 1.17-1.21 mPa.s (1.17-1.21 centipoises) at 20 °C
Solubility	Solubility in Water: Miscible. [13] Solubility in Organic Solvents: Soluble in all proportions with ethers, acetone, chloroform, ketones, hydrocarbons, acids, esters, glycols, other alcohols and many other organic solvents.
Partition coefficient — n-octanol/ water (logarithmic value)	Log P(oct) = -0.32 (measured) (ethanol)
Vapour pressure	5.9 kPa (44.3 mm Hg) at 20 °C (ethanol)
Evaporation rate	2.4 (n-butyl acetate = 1); 8.3 (diethyl ether = 1) (ethanol)
Density and relative density	Specific Gravity: 0.79 @ 20 °C/4 °C (ethanol)
Relative vapour density	1.5 (ethanol)
Particle characteristics	n/a

Supplemental information regarding physical hazard classes
Surface Tension: 22.4 mN/m (22.4 dynes/cm) at 20 °C (ethanol)

Further safety characteristics (supplemental)
Saturated Vapour Concentration: 58300 ppm (5.8%) at 20 °C (calculated)

SECTION 10: Stability and reactivity

Reactivity
Stable under normal conditions of storage and handling.

Risk of ignition. Vapours may form explosive mixtures with air

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Strong oxidizing agents (e.g. chromium trioxide, chlorine oxides, nitrosyl perchlorate, nitric acid and permanganates) - may react violently or explosively. Increased risk of fire and explosion; hydrogen peroxide - mixtures of concentrated peroxide and ethanol can be detonated by shock or heat; perchloric acid, metal perchlorates (e.g. silver perchlorate), mercuric nitrate, silver nitrate, silver and nitric acid, or silver oxide and aqueous ammonia - may form shock-sensitive or explosive compounds; alkali metals (e.g. sodium or potassium) - reaction may be explosive due to the formation of hydrogen-air mixtures, unless air is excluded; bromine pentafluoride, disulfuryl difluoride or bromides - reaction may be vigorous or violent with risk of fire and explosion; phosphorus (III) oxide - ignites readily at normal temperatures; potassium tert-butoxide - contact of solid butoxide with ethanol vapour caused ignition; acids, acid anhydrides, or acid chlorides - reaction may be vigorous or violent, with the evolution of heat.

Conditions to avoid
Heat, flames, ignition sources, moisture and incompatibles.

Incompatible materials
Strong oxidizing agents (e.g. chromium trioxide, chlorine oxides, nitrosyl perchlorate, nitric acid and permanganates); hydrogen peroxide; perchloric acid, metal perchlorates (e.g. silver perchlorate), mercuric nitrate, silver nitrate, silver and nitric acid, or silver oxide and aqueous ammonia; alkali metals (e.g. sodium or potassium); bromine pentafluoride, disulfuryl difluoride or bromides; phosphorus (III) oxide; potassium tert-butoxide; acids, acid anhydrides, or acid chlorides.

Hazardous decomposition products
Oxides of carbon.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Acute Toxicity - Oral: LD50 (rat): 7060 mg/kg (ethanol).

Ingestion: Cause headaches, gastritis, intoxication, blindness and, in acute cases, death.
Inhalation: Exposure may cause irritation to the mucous membranes of the upper respiratory tract. Prolonged exposures to high concentrations may cause drowsiness, loss of appetite and inability to concentrate.

Skin corrosion/irritation
May cause skin irritation, cracking or flaking due to dehydration and defatting action.

Serious eye damage/irritation
Causes serious eye irritation. On eye contact this product will cause tearing, stinging, blurred vision, and redness.

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
Chronic Effects: Prolonged skin contact causes drying and cracking of skin. May affect the nervous system. May affect liver, blood, reproductive system. Continued ingestion of small amounts could result in blindness.

SECTION 12: Ecological information

Toxicity
Not expected to bioconcentrate in fish.

Mobility in soil
Distribution: Log P(oct) = -0.32 (measured).

Other adverse effects
Ethanol: In water, will volatilize and probably degrade.

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)
UN Number: 1170
Class: 3
Packing Group: II
Proper Shipping Name: ETHANOL (ETHYL ALCOHOL)

Hazchem emergency action code (EAC)
2[Y]E

IMDG
UN Number: 1170
Class: 3
Packing Group: II
EMS Number:
Proper Shipping Name: ETHANOL (ETHYL ALCOHOL)

IATA
UN Number: 1170
Class: 3
Packing Group: II
Proper Shipping Name: ETHANOL (ETHYL ALCOHOL)

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP
Poison Schedule: S5

SECTION 16: Other information

Further information/disclaimer
ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

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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 fot 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 Airbourne 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)