MATERIAL SAFETY DATA SHEET
SDS/MSDS

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Potassium Permanganate 1.0 N (0.02 mol/L) Solution in water

OTHER NAMES
"analytical reagent", "potassium permanganate solution", "potassium permanganate in water"

PRODUCT USE
Reagent for redox titrations.
• Material is mixed and used in accordance with manufacturers directions.

SUPPLIER
Company: Bio-Chem Chemicals
Address:
5455 NicholsonRoad, Science Market
Ambala Cantt, 133001 - Haryana
+91 82952 41953
info@biofinechemical.com - www.biofinechemical.com

Section 2 - HAZARDS IDENTIFICATION

GHS Classification
Chronic Aquatic Hazard Category 2

EMERGENCY OVERVIEW

HAZARD

Determined by using GHS criteria

H411	Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention

Code	Phrase
P273	Avoid release to the environment.

Response

Code	Phrase
P391	Collect spillage.

Disposal

Code	Phrase
P501	Dispose of contents/container to ...

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
potassium permanganate	7722-64-7	<5
water	7732-18-5	95

Section 4 - FIRST AID MEASURES

SWALLOWED
■ If poisoning occurs, contact a doctor or Poisons Information Centre.
• If swallowed do NOT induce vomiting.
• If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
• Observe the patient carefully.
• Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.

EYE
■ If this product comes in contact with the eyes:
• Wash out immediately with fresh running water.
• Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
• Seek medical attention without delay; if pain persists or recurs seek medical attention.
• Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN
■ If skin contact occurs:
• Immediately remove all contaminated clothing, including footwear.
• Flush skin and hair with running water (and soap if available).
• Seek medical attention in event of irritation.

INHALED
• If fumes or combustion products are inhaled remove from contaminated area.
• Lay patient down. Keep warm and rested.
• Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
• Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

NOTES TO PHYSICIAN
■ Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
• There is no restriction on the type of extinguisher which may be used.

FIRE FIGHTING
• Alert Fire Brigade and tell them location and nature of hazard.
• Wear breathing apparatus plus protective gloves in the event of a fire.
• Prevent, by any means available, spillage from entering drains or water courses.
• Use fire fighting procedures suitable for surrounding area.

FIRE/EXPLOSION HAZARD
• Non combustible.
• Not considered a significant fire risk, however containers may burn.
Heating may cause expansion or decomposition leading to violent rupture of containers.

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
• Clean up all spills immediately.
• Avoid breathing vapours and contact with skin and eyes.
• Control personal contact with the substance, by using protective equipment.
• Contain and absorb spill with sand, earth, inert material or vermiculite.

MAJOR SPILLS
■ Minor hazard.
• Clear area of personnel.
• Alert Fire Brigade and tell them location and nature of hazard.
• Control personal contact with the substance, by using protective equipment as required.
• Prevent spillage from entering drains or water ways.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
• Limit all unnecessary personal contact.
• Wear protective clothing when risk of exposure occurs.
• Use in a well-ventilated area.
• Avoid contact with incompatible materials.

SUITABLE CONTAINER
Packs of vials
• Glass container is suitable for laboratory quantities.
Plastic container.
• Check that containers are clearly labelled.
• Packaging as recommended by manufacturer.

STORAGE INCOMPATIBILITY
Avoid bulk storage with organic materials, combustible materials, strong reducing agents, acids, peroxides, alcohols and chemically active metals.

STORAGE REQUIREMENTS
• Store in original containers.
• Keep containers securely sealed.
• Store in a cool, dry, well-ventilated area.
• Store away from incompatible materials and foodstuff containers.
• Protect from light.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	Peak mg/m³
India Permissible Levels of Certain Chemical Substances in Work Environment	potassium permanganate (Manganese dust and compounds (as Mn))	5

The following materials had no OELs on our records
• water: CAS:7732- 18- 5

MATERIAL DATA
POTASSIUM PERMANGANATE PREPARED SOLUTIONS 1N,0.02N,0.0125N:
■ None assigned. Refer to individual constituents.

POTASSIUM PERMANGANATE:

■ A number of studies have shown that susceptibility to the effects of manganese at or about 1 - 5 mg/m3 (TWA) can lead to clinical manifestations of manganism or more commonly to the development of indicators of sub-clinical manganism (e.g. hand tremor, exaggerated reflexes, short-term memory deficits, poor psychomotor performance). Controlling long-term exposure to the recommended ES TWA level or below should provide protection for those individuals susceptible to neurological effects of prolonged exposure.

Ceiling values were recommended for manganese and compounds in earlier publications. As manganese is a chronic toxin a TWA is considered more appropriate.

WATER:

■ No exposure limits set by NOHSC or ACGIH.

PERSONAL PROTECTION

RESPIRATOR

•Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

EYE

• Safety glasses with side shields; or as required,
• Chemical goggles.
• Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent].

HANDS/FEET

■ Wear chemical protective gloves, e.g. PVC.
Wear safety footwear.

OTHER

• Overalls.
• Eyewash unit.

ENGINEERING CONTROLS

■ Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Clear,odourless purple liquid.

PHYSICAL PROPERTIES

Liquid.
Mixes with water.

State	Liquid	Molecular Weight	158 solute
Melting Range (°C)	Not available.	Boiling Range (°C)	100 dilute soln.
Solubility in water (g/L)	Miscible	Flash Point (°C)	Not applicable

pH (1% solution)	Not available.	Decomposition Temp (°C)	Not available.
pH (as supplied)	Not available	Autoignition Temp (°C)	Not applicable
Vapour Pressure (kPa)	Not available.	Upper Explosive Limit (%)	Not applicable
Specific Gravity (water=1)	1.0	Lower Explosive Limit (%)	Not applicable
Relative Vapour Density (air=1)	Not available.	Volatile Component (%vol)	Not available.
Evaporation Rate	Not available		

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY
• Presence of incompatible materials.
• Product is considered stable.
• Hazardous polymerisation will not occur.
For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

Health hazard summary table:

Acute toxicity	Not applicable
Skin corrosion/irritation	Not applicable
Serious eye damage/irritation	Not applicable
Respiratory or skin sensitization	Not applicable
Germ cell mutagenicity	Not applicable
Carcinogenicity	Not applicable
Reproductive toxicity	Not applicable
STOT- single exposure	Not applicable
STOT- repeated exposure	Not applicable
Aspiration hazard	Not applicable

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
■ Considered an unlikely route of entry in commercial/industrial environments.

INHALED
■ Not normally a hazard due to non-volatile nature of product.

CHRONIC HEALTH EFFECTS
■ Primary route of exposure is usually by skin contact.
Prolonged contact may result in skin irritation and brown stains on the skin.
Ingestion of large amounts may cause abdominal pain, diarrhoea, nausea and vomiting.
The concentrated solution has a powerful styptic action (stops or prevents haemorrhage) and antiseptic properties.

TOXICITY AND IRRITATION
■ Not available. Refer to individual constituents.

Section 12 - ECOLOGICAL INFORMATION

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Avoid release to the environment.
Refer to special instructions/ safety data sheets.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
potassium permanganate	HIGH	No Data Available	LOW	HIGH

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury residue in an authorised landfill.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM:
None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG

Section 15 - REGULATORY INFORMATION

REGULATIONS

Regulations for ingredients

potassium permanganate (CAS: 7722-64-7) is found on the following regulatory lists;
"FisherTransport Information","India Chemical Accidents Rules - Schedule 1: List of Hazardous Chemicals","India Permissible Levels of Certain Chemical Substances in Work Environment","OECD List of High Production Volume (HPV) Chemicals","Sigma-AldrichTransport Information","United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances - Table I","United Nations List of Precursors and Chemicals Frequently used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control (Red List) - Table I"

water (CAS: 7732-18-5) is found on the following regulatory lists;
"IMO IBC Code Chapter 18: List of products to which the Code does not apply","International Fragrance Association (IFRA) Survey: Transparency List","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution – Norway","Sigma-AldrichTransport Information"

No data for potassium permanganate prepared solutions 1N,0.02N,0.0125N (CW: 54611)

Section 16 - OTHER INFORMATION

- Classification of the preparation and its individual components has drawn on official and authoritative sources using available literature references.

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.