SAFETY DATA SHEET

PRODUCT NAME: POTASSIUM PERMANGANATE 99%

Issue Date: 14 November 2025

SECTION 1: IDENTIFICATION

Product Name: Potassium Permanganate
Other Names: PERMANGANIC ACID (HMnO4), POTASSIUM SALT; PERMANGANATE OF POTASH

Product Code: ZPPERM

Uses: Oxidizing and bleaching agent; reagent in analytical chemistry; disinfectant; deodorizer; algaecide for water treatment; dye ingredient; agent in medical treatment for some poisons; local anti-infective agent; to remove iron and manganese from solution; tanning.

Supplier: HamChem Hamilton Chemicals Ltd, 75 Ruffell Rd, Hamilton
Phone: 079744971 Web: www.hamchem.co.nz Email: info@hamchem.nz

- **In emergency dial 111, and then ask for Fire, Ambulance or Police as necessary.**
- **In case of poisoning phone National Poisons Centre – 0800 764 766**

SECTION 2: HAZARD IDENTIFICATION

GHS Classifications
Oxidising Solid – Category 2
Acute Toxicity (Oral) – Category 4
Skin Corrosion – Category 1C
Serious Eye Damage – Category 1
Reproductive Toxicity – Category 2
Specific Target Organ Toxicity (repeated exposure) – Category 1
Hazardous to the Aquatic Environment (acute) – Category 1
Hazardous to the Aquatic Environment (chronic) – Category 1

Signal Word: DANGER

Hazard Statements
H272 May intensify fire; oxidizer.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage
H318 Causes serious eye damage
H361 Suspected of damaging fertility or the unborn child
H372 Causes damages to organs through prolonged or repeated exposure
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Prevention
P201 Obtain special instructions before use
P202 Do not handle until all safety precautions have been read and understood
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 Keep away from clothing and other combustible materials
P264 Wash all parts of body thoroughly after handling

P260 Do not breathe dusts or mists.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves/clothing and eye/face protection

Response
P370 + P378 IN CASE OF FIRE: Use large quantities of water to extinguish. Do not use dry chemicals or foam.
P301 + P312 IF SWALLOWED: Call a POISON CENTRE or Doctor if you feel unwell.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P363 Wash contaminated clothing before reuses.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310 Immediately call a POISON CENTRE or Doctor
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTRE or Doctor.
P308 + P313 If exposed or concerned: get medical advice/attention.
P391 Collect spillage

Storage
P405 Store locked up

Disposal
P501 Dispose of contents/container to an approved waste facility in accordance with local regulations.

SECTION 3: COMPOSITION & INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportion (%)
Potassium Permanganate	7722-64-7	>99

SECTION 4: FIRST AID MEASURES

Swallowed: Provide rest, warmth and fresh air. If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Eye: In case of contact, immediately flush eyes with running water for at least 20 minutes. Remove any contact lenses and open eyes wide apart. Get medical aid immediately.
Note to physician: Decomposition products are alkaline.

Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Remove contaminated clothing and footwear.
Caution: Solution may ignite certain textiles. Wash clothing and decontaminate footwear before reuse.

Inhaled: If inhaled, remove to fresh air at once. Loosen tight clothing such as a collar, tie, belt or waistband. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid

Advice to Doctor: Treat symptomatically based on judgement of doctor and individual reactions of patient. For inhalation, consider oxygen. Avoid gastric lavage or emesis. Decomposition products are alkaline. Insoluble decomposition product formed is brown coloured manganese dioxide.

Medical Conditions Aggravated by Exposure: Potassium Permanganate solution will cause further irritation of tissue, open wounds, burns or mucous membranes. Prolonged exposure, usually over many years, to heavy concentrations of manganese oxides in the form of dust and fumes may lead to chronic manganese poisoning, chiefly involving the central nervous system.

SECTION 5: FIRE FIGHTING MEASURES

General Measures: Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Approach incident with caution.

Flammability Conditions: Increases burning rate of combustible material.

Extinguishing Media: Use large quantities of water. Do not use dry chemicals, CO2, Halon or foams. Water will turn pink to purple when in contact with potassium permanganate. Dike to contain. Do not use dry chemicals, CO2, Halon or foams, because they are not effective. If material is involved in fire, flood with water. Cool all affected containers with large quantities of water. Apply water from as far a distance as possible.

Fire and Explosion Hazard: Powerful oxidizing material. May decompose spontaneously if exposed to heat (135 deg C / 275 deg F). May be explosive in contact with certain other chemicals (see Stability & Reactivity section). May react violently with finely divided and readily oxidisable substances.

Hazardous Products of Combustion: When involved in a fire, potassium permanganate may liberate irritating, poisonous and/or corrosive fumes. Oxides of potassium and manganese may be formed.

Special Fire Fighting Instructions: Water runoff can cause environmental damage. Dike and collect water used to fight fire. Strong oxidizer. Contact with other material may cause fire. Some oxidizer may react explosively with hydrocarbons (fuel). May accelerate burning if involved in a fire. Containers may explode when heated.

Personal Protective Equipment: Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves) or chemical splash suit.

Flash Point:	No Data Available
Lower Explosion Limit:	No Data Available
Upper Explosion Limit:	No Data Available
Auto Ignition Temperature:	No Data Available

SECTION 6: ACCIDENTAL RELEASE MEASURES

General Response Procedure: Avoid contact with combustible materials. Do not touch spilled material. Move containers away from spill to a safe area. Keep unnecessary people away, isolate hazard area and deny entry. Ensure adequate ventilation. Avoid inhalation of dust and vapours. Avoid contact with skin and eyes. Provide adequate ventilation. Remove all ignition sources and incompatible materials before attempting clean up.

Clean up Procedures: Vacuum or sweep up material and place into a suitable disposal container. Avoid run off into storm sewers and ditches which lead to waterways. SPILLS/LEAKS: Clean up spills immediately, observing precautions in the Protective Equipment section. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body. Avoid generating dusty conditions. Provide ventilation. Do not use combustible materials such as paper towels to clean up spill. SPILL CLEAN UP METHODS: Remove spillage with vacuum cleaner. If not possible, collect spillage with shovel, broom or the like. Flush contaminated area with plenty of water. Collect spillage in containers, seal securely and deliver for disposal according to local regulations

Containment: Stop leak if safe to do so. Isolate the danger area.

Decontamination: To clean contaminated floors, flush with abundant quantities of water into sewer, if permitted by federal, state, and local regulations. If not, collect water and treat as described above.

Environmental Precautionary Measures: Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management.

Evacuation Criteria: Evacuate all unnecessary personnel.

SECTION 7: HANDLING & STORAGE

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Keep from contact with clothing and other combustible materials. Discard contaminated shoes. Do not breathe dust. Do not breathe spray or mist. Inform laundry personnel of contaminant's hazards. Provide sufficient mechanical and/or local exhaust to maintain exposure below the TLV/TWA.

Storage: Oxidiser storage. Do not store near combustible materials. Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from strong acids. Keep away from flammable liquids. Keep away from reducing agents. Avoid storage on wooden floors or pallets.

Container: Use only plastic (PE, PP, PVC) or fibreglass containers/vessels – corrosive to mild and stainless steels. Other tanks should be lined with chloride resistant materials. Pumps should also be lined with chloride resistant materials.

SECTION 8: EXPOSURE CONTROLS & PERSONAL PROTECTION

General: No exposure standard has been established for Potassium Permanganate by Worksafe NZ, however the exposure standard for Manganese [7439-96-5) as Mn, TWA 0.02mg/m3

*Note: The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. These exposure standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Exposure Limits: No Data Available

Biological Limits: No information available on biological limit values for this product.

Engineering Measures: A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Personal Protection Equipment:
RESPIRATOR: In cases where overexposure to dust may occur, the use of an approved NIOSH-MSHA dust respirator or an air supplied respirator is advised. Engineering or administrative controls should be implemented to control dust (AS1715/1716).

Measurement Element: Manganese (Mn)

10 mg/m3: Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering face pieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100 or P100. Any supplied-air respirator.

25 mg/m3: Any supplied-air respirator operated in a continuous-flow mode. Any powered, air-purifying respirator with a high-efficiency particulate filter.

50 mg/m3:Any air-purifying, full-face piece respirator equipped with an N100, R100, or P100 filter. Any supplied-air respirator with a tight-fitting face piece that is operated in a continuous-flow mode. Any powered, air-purifying respirator with a tight-fitting face piece and a high-efficiency particulate filter. Any self-contained breathing apparatus with a full face piece. Any supplied-air respirator with a full face piece.

500 mg/m3: Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode.

Emergency or planned entry into unknown concentrations or IDLH conditions - Any self-contained breathing apparatus that has a full face piece and is operated in a pressure-demand or other positive-pressure mode

Escape: Any air-purifying, full-face piece respirator equipped with an N100, R100, or P100 filter. Any appropriate escape-type, self-contained breathing apparatus.

EYES: Face shield, goggles, or safety glasses with side shields should be worn. Provide eyewash in working area (AS1336/1337).

HANDS: Rubber or plastic gloves should be worn (AS2161).

CLOTHING: Chemically resistant clothing covering arms and legs, and rubber or plastic apron should be worn. Caution: If clothing becomes contaminated, wash off immediately (AS3765/2210).

Work Hygienic Practices: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

Physical State: Solid
Odour: Odourless
Colour: Dark purple-bronze
pH: No Data Available
Vapour Pressure: No Data Available
Relative Vapour Density: No Data Available
Boiling Point: No Data Available
Freezing Point: 240 °C
Specific Gravity: 2.700 g/cm3
Flash Point: No Data Available
Bulk Density: No Data Available
Corrosion Rate: No Data Available
Decomposition Temperature: No Data Available
Density: No Data Available
Specific Heat: No Data Available
Molecular Weight: 158.03 g/mol
Melting Point: Starts to decompose with evolution of oxygen (O2)
Appearance: Crystals
Evaporation Rate: No Data Available
Net Propellant Weight: No Data Available
Auto Ignition Temp: No Data Available
Solubility: 6.4 g/100 ml @ 20'C 20°C
Octanol Water Coefficient: No Data Available
Saturated Vapour Concentration: No Data Available
Vapour Temperature: No Data Available
Viscosity: No Data Available
Volatile Percent: No Data Available
VOC Volume: No Data Available
Additional Characteristics: Relative Density: 2.7 (20 deg C)
Potential for Dust Explosion: No Data Available
Fast or Intensely Burning Characteristics: No Data Available
Flame Propagation or Burning Rate of Solid Materials: Increases burning rate of combustible material.
Non-Flammables That Could Contribute Unusual Hazards to a Fire: No Data Available
Properties That May Initiate or Contribute to Fire Intensity: Powerful oxidizing material. May decompose spontaneously if exposed to heat (135 deg C / 275 deg F).
Reactions That Release Gases or Vapours: No Data Available
Release of Invisible Flammable Vapours and Gases: No Data Available
Particle Size: No Data Available
Partition Coefficient: No Data Available

SECTION 10: STABILITY & REACTIVITY

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Avoid heat, flames and other sources of ignition. Avoid excessive heat for prolonged periods of time. Dust generation, temperatures above 150'C.

Materials to Avoid: Strong reducing agents, strong acids, alcohols, formaldehyde, peroxides, arsenites, mercurous salts, hypophosphites, combustible organics, sulfites, bromides, hydrochloric acid, charcoal, iodides, metal powders, ethylene glycol, organic materials, some metals, ferrous salts.

Hazardous Decomposition Products: When involved in a fire, potassium permanganate may liberate irritating, poisonous and/or corrosive fumes. Oxides of potassium and manganese may be formed.

Hazardous Polymerisation: This product is not known to polymerize.

SECTION 11: TOXICOLOGICAL INFORMATION

General Information:

Acute toxicity:
Oral, mouse: LD50=750mg/kg;
Oral, rat: LD50=780mg/kg male (14days). 525mg/kg female (14days).
Harmful if swallowed. ALD: 10g. Ingestion may cause nausea, vomiting, sore throat, stomach ache, and eventually lead to a perforation of the intestine. Liver and kidney injuries may occur.

Chronic Toxicity: No known cases of chronic poisoning due to permanganates have been reported. Prolonged exposure, usually over many years, to heavy concentrations of manganese oxides in the form of dust and fumes may lead to chronic manganese poisoning, chiefly involving the central nervous system.

Carcinogenicity: Potassium permanganate has not been classified as a carcinogen by ACGIH, NIOSH, OSHA, NTP, or IARC.D

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:
96Hr LC50 Rainbow trout 1.8 mg/L
96Hr LC50 Bluegill sunfish 2.3 mg/L
96Hr LC50 Milk fish (Chanos Chanos >1.4 mg/L
96Hr LC50 Carassius auratus 3.3-3.93 mg/L (static)
96Hr LC50 Cyprinus carpio 2.97-3.11 mg/L
96Hr LC50 Cyprinus carpio 3.16-3.77 mg/L
96Hr LC50 Lepomis macrochirus 2.3 mg/L (flow-through)
96Hr LC50 Lepomis macrochirus 1.8-5.6 mg/L (static)
96Hr LC50 Lepomis macrochirus 2.7 mg/L (static)
96Hr LC50 Oncorhynchus mykiss 1.08-1.38 mg/L
96Hr LC50 Oncorhynchus mykiss 0.77-1.27 mg/L

Permanganate has a low estimated lifetime in the environment, being readily converted to oxidisable materials to insoluble MnO_2.

Persistence/Degradability: Mobility Miscible in water.

Environmental Fate: Do not allow product to reach ground water, water course or sewage system, even in small quantities. Very toxic for aquatic organisms.

Bioaccumulation Potential: In non-reducing and non-acidic environments, MnO_2 is insoluble and has a very low bioaccumulative potential.

Environmental Impact: No Data Available

SECTION 13: DISPOSAL CONSIDERATIONS

General Information: Waste to be treated as controlled waste. Disposal to licensed waste disposal site in accordance with local Waste Disposal Authority. Do not puncture or incinerate even when empty.

Special Precautions for Land Fill: Contact a specialist disposal company or the local waste regulator for advice. For disposal of potassium permanganate solutions, follow procedures in Accidental Release Measures section of this SDS and deactivate the permanganate to insoluble manganese dioxide. Dispose of it in a permitted landfill.

SECTION 14: TRANSPORT INFORMATION

Road and Rail Transport
Classified as a Dangerous Good according to NZS 5433:2020 Transport of Dangerous Goods on Land.

Proper Shipping Name	POTASSIUM PERMANGANATE
Class	5.1 Oxidising Substances
Subsidiary Risk(s)	No Data Available
UN Number	1490
Hazchem	1Y
Pack Group	II

SECTION 15: REGULATORY INFORMATION

EPA Approval Number: HSR001342

HSNO Classifications: 5.1.1B, 6.1D, 8.2C, 8.3A, 6.8B, 6.9A, 9.1A

SECTION 16: OTHER INFORMATION

End of SDS.

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