Infosafe No™ 1CH5M	Issue Date :November 2022	RE-ISSUED by CHEMSUPP

Product Name **POTASSIUM METAL**

Classified as hazardous

Section 1 - Identification

Product Identifier	POTASSIUM METAL
Company Name	CHEMSUPPLY AUSTRALIA PTY LTD (ABN 19 008 264 211)
Address	38 - 50 Bedford Street GILLMAN SA 5013 Australia
Telephone/Fax Number	Tel: (08) 8440-2000
Emergency Phone Number	CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)
E-mail Address	www.chemsupply.com.au
Recommended use of the chemical and restrictions on use	Preparation of potassium peroxide, heat-exchange alloys (sodium-potassium), laboratory reagent, seeding of combustion gases in magnetohydrodynamic generators and synthesis of organic and inorganic potassium compounds; inorganic syntheses involving condensation, dehalogenation, reduction, and polymerization reactions, in turbines (vaporized metal).

Other Names

Name	Product Code
POTASSIUM METAL LR (In liquid paraffin)	PL092

Other Information

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.

Section 2 - Hazard(s) Identification

GHS Classification of the Substance/Mixture	Substances and Mixtures which, in contact with water, emit flammable gases: Category 1 Skin Corrosion/Irritation: Category 1A
Signal Word	DANGER
Hazard Statement (s)	H260 In contact with water releases flammable gases which may ignite spontaneously. H314 Causes severe skin burns and eye damage. AUH014 Reacts violently with water
Pictogram (s)	Flame, Corrosion

Precautionary Statement – Prevention	P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire. P231+P232 Handle under inert gas. Protect from moisture. P260 Do not breathe dust/fume/gas/mist/vapours/spray. P264 Wash thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary Statement – Response	P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

	P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 CENTER or doctor/physician. P335+P334 Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages. P363 Wash contaminated clothing before reuse. P370+P378 In case of fire: Use dry sand for extinction.
Precautionary Statement – Storage	P402+P404 Store in a dry place. Store in a closed container. P405 Store locked up.
Precautionary Statement – Disposal	P501 Dispose of contents/container according to local, state and federal regulations.

Section 3 - Composition and Information on Ingredients

Ingredients	Name	CAS	Proportion
	Potassium	7440-09-7	98-100 %

Section 4 - First Aid Measures

Inhalation	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Consult a physician.
Ingestion	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.
Skin	Brush off loose particles from skin. Wash affected areas with copious quantities of water immediately for at least 15 minutes while removing contaminated clothing and shoes. Immerse in cool water/wrap in wet bandages. Wash clothing before reuse. Consult a physican.
Eye	If contact with the eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. Seek immediate medical assistance.
First Aid Facilities	Maintain eyewash fountain and drench facilities in work area.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of the patient.
Other Information	For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

Section 5 - Firefighting Measures

Hazards from Combustion Products	Highly irritating fumes (or gases) including oxides of potassium, and peroxides. Reaction with water is violent, forming heat, spattering, corrosive potassium hydroxide and flammable and/or explosive hydrogen gas.
Specific Methods	DO NOT USE WATER OR FOAM. Small fire: Use dry chemical, soda ash, lime or sand. If safe to do so, move undamaged containers from fire area. Large fire: Use DRY sand, dry chemical, soda ash or lime or withdraw and let fire burn. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.
Specific Hazards Arising from the Chemical	Produce flammable substances on contact with water. May ignite on contact with water or moist air. May react vigorously or explosively on contact with water. May be ignited by heat, sparks or flame. May re-ignite after fire is extinguished. Fire will produce irritating, poisonous and/or corrosive gases. Containers may explode when heated. Runoff may create multiple fire or explosion hazard.
Hazchem Code	4W
Precautions in connection with Fire	Wear SCBA and chemical splash suit. Structural firefighter's uniform may provide limited protection.

Section 6 - Accidental Release Measures

Spills & Disposal

ELIMINATE all ignition sources (no smoking, flares, sparks or flames) within at least 25m. Do not touch or walk through spilled material. Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas. Water spray may be used to knock down vapours or divert vapour clouds. DO NOT GET WATER inside containers or in contact with substance.
Small spill
Cover with DRY earth, sand or other non-combustible material followed by plastic sheet to minimize spreading or contact with rain.
Large Spill
SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

Personal Precautions

Evacuate the area of all non-essential personnel. Avoid inhalation, contact with skin, eyes and clothing.

Personal Protection

Wear protective clothing specified for normal operations (see Section 8)

Section 7 - Handling and Storage

Precautions for Safe Handling

Avoid ingestion and inhalation of dust, vapour, mist, or gas. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Keep container tightly closed. Container should be opened by a technically qualified person. Use with adequate ventilation. If you feel unwell, seek medical attention and show the label when possible. Potassium should be handled with care, with full skin and eye protection. Discard contaminated shoes. Exposure to moisture is a caustic hazard. Protect from air, water/moisture, moist air and steam. Handle under inert gas/nitrogen. Keep container dry. Do not allow contact with water. Do not allow water to get into the container because of violent reaction. Keep away from heat and all sources of ignition. Keep away from incompatibles such as oxidizing agents, organic materials, metals, acids, moisture.

Conditions for safe storage, including any incompatibilities

Store in tightly closed containers, in a cool, dry, well-ventilated area away from incompatible substances. Protect containers against high temperatures, physical damage, direct sunlight, air and moisture. Keep container closed when not in use. Moisture sensitive. Air Sensitive. Store protected from air. Solid potassium reacts violently with water, and must be stored to avoid contact with carbon monoxide and moisture, compounds of heavy metals (such as silver oxide and silver chloride) and carbon tetrachloride since violent reactions occur. Keep in a water-free area, away from any possible contact with water. Do not allow water to get into container. Keep away from water or locations where water may be used for fighting fires. Potassium should therefore be stored in inert atmospheres, such as argon or nitrogen, under liquids that are oxygen free, such as toluene or a mineral oil such as kerosene, liquid petrolatum, or petroleum, or in glass capsules that have been filled under vacuum or inert atmosphere, NEVER under halogenated hydrocarbons. Store away from combustible materials. Keep away from heat, and all sources of ignition, such as sparks, open flame, and smoking, which can create a potential fire or explosion hazard. Wherever potassium is used, handled, manufactured, or stored, use explosion-proof electrical equipment and fittings. Airtight. Unbreakable packaging; put breakable packaging into closed unbreakable container.

Corrosiveness

May produce corrosive solutions on contact with water. Corrosive - may cause skin and eye burns.

Storage Regulations

Refer Australian Standard AS/NZS 2243.10:2004 'Safety in laboratories - Storage of chemicals'.

Storage Temperatures

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

Section 8 - Exposure Controls and Personal Protection

Other Exposure Information

A time weighted average (TWA) concentration for an 8 hour day, and 5 day week has not been established by Safe Work Australia for this product. There is a blanket limit of 10 mg/m³ for dusts when limits have not otherwise been established.

Engineering Controls	In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. Potassium should be handled under inert gas, and should only be used in a chemical fume hood, and with non-sparking tools. Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Respiratory Protection	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.
Eye and 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.
Hand Protection	Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance.
Personal Protective Equipment	Final choice of personal protective equipment will depend on individual circumstances and/or according to risk assessments undertaken.
Body Protection	Flame retardant antistatic protective clothing. 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.
Hygiene Measures	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Section 9 - Physical and Chemical Properties

Form	Solid
Appearance	Soft, silvery-white metal, tarnishing to grey upon exposure to air.
Odour	Odourless.
Melting Point	63.38 °C
Boiling Point	759 °C
Solubility in Water	Decomposes/reacts violently in water to form potassium hydroxide.
Solubility in Organic Solvents	Soluble in liquid ammonia, ethylenediamine, aniline. Decomposes in alcohol. Soluble in acid, mercury.
Specific Gravity	0.856
pH	Basic in water (>7)
Vapour Pressure	Negligible at 20°C; 0.09 mmHg at 260 °C; 8 mm Hg @ 432 °C.
Relative Vapour Density (Air=1)	1.4
Surface Tension	86 dyn/cm at 100 °C
Flammability	Combustible.
Explosion Properties	Can react vigorously or explosively on contact with water. Mixture of solid forms of potassium and carbon dioxide (as dry ice) explodes when subjected to shock. Potassium and its alloys form explosive mixtures with carbon tetrachloride and chlorinated hydrocarbons. Potassium metal will form the peroxide and the superoxide at room temperature even when stored under mineral oil; may explode violently when handled or cut.
Molecular Weight	39.0983

Solubility in other solvents (kg/m3)	Soluble in several metals; forms liquid alloys with other alkali metals.
Specific Heat Value	0.176 cal/g ° (0 °C).
Other Information	Magnetic ordering: paramagnetic. Mohs hardness: 0.4. Brinell hardness: 0.363 MPa. Atomic number 19; valence 1. Group IA. Becomes brittle at low temperatures. Potassium and its salts impart a violet colour to flames.

Section 10 - Stability and Reactivity

Chemical Stability	Stable, if protected from air or moisture. In air it begins to tarnish toward grey immediately. Forms surface crust of explosive potassium oxides on exposure to moist air.
Possibility of Hazardous Reactions	One of the most reactive metals. Reacts violently and exothermically with water (even at -100 °C) and moisture, producing flammable and/or explosive, but non-toxic hydrogen gas and corrosive potassium hydroxide, causing fire and explosion hazard. Potassium reacts quickly with even traces of water, and its reaction products are nonvolatile. May ignite combustible materials if they are damp. Air sensitive. Oxidizes (tarnishes) when exposed to air. Peroxide (K2O2) and superoxide (KO2 and K2O4) formation may occur at room temperature in containers that have been opened and remain in storage, even when stored under mineral oil. Potassium metal containing an oxide coating is an extremely dangerous explosion hazard and may explode violently when handled or cut. The substance decomposes rapidly under the influence of air forming flammable/explosive gas (hydrogen). Mixture of solid forms of potassium and carbon dioxide (as dry ice) explodes when subjected to shock. Potassium and its alloys form explosive mixtures with carbon tetrachloride and chlorinated hydrocarbons. Reacts violently with acids, alcohols, carbon monoxide, oxidizers, organic materials, heavy metal compounds, iodine, halogenated hydrocarbons, easily oxidized materials, and many other substances. Reacts exothermally with halogens, acids and halogenated hydrocarbons. Reacts vigorously with oxygen; with halogens, igniting with bromine. Reactive with metals, and organic compounds containing active groups. Reacts slowly with anhydrous hydrogen halides at room temperature. Reduces silicates, sulfates, nitrates, carbonates, phosphates, oxides and hydroxides of heavy metals, often with separation of the metal. Does not react with noble gases such as helium and argon. Inert to saturated aliphatic and to aromatic hydrocarbons. Molten potassium ignites in acetylene. Molten metal reacts with sulfur, with hydrogen sulfide. Reacts with hydrogen slowly at 200 °C, rapidly at 350-400 °C.
Conditions to Avoid	Heat, ignition sources, exposure to air, water, moisture, moist air, and incompatible materials.
Incompatible Materials	Oxidizing agents, carbon monoxide, carbon dioxide (as dry ice), acids, metal and non-metal halides, halogens, bromine and iodine, halogenated hydrocarbons, carbon tetrachloride, hydrogen iodide, anhydrous hydrogen halides, organic compounds containing active groups, silicates, sulfates, nitrates, carbonates, phosphates, oxides and hydroxides of heavy metals, Telfon, heavy metal compounds, easily oxidized materials, acetylene + heat, combustible materials if they are damp, alcohols, moisture, air, metals, oxygen; water even at -100 °C; hydrogen slowly at 200 °C, rapidly at 350-400 °C, and many other substances.
Hazardous Decomposition Products	Highly irritating fumes, hydrogen gas, peroxides, and oxides of potassium.
Hazardous Polymerization	Will not occur.

Section 11 - Toxicological Information

Ingestion	Very harmful by ingestion. May cause severe gastrointestinal tract irritation with burning sensation, nausea, vomiting and possible burns. May cause systemic toxic effects of the heart, liver, and kidneys, with symptoms including shock or collapse. It may affect the blood.

Inhalation	May be harmful if inhaled. Exposure to fumes, dusts or mists may cause irritation of the nose, throat and respiratory tract or chemical burns to the respiratory tract with burning pain in the nose and throat, coughing, sneezing, wheezing, and shortness of breath. Potassium fumes can irritate the lungs. Higher exposures may be fatal as a result of spasm, inflammation, oedema of the larynx and bronchi, chemical pneumonitis and pulmonary oedema. Repeated inhalation of Potassium fumes may cause sores of the inner nose, and bronchitis to develop with cough, phlegm, and/or shortness of breath.
Skin	Very harmful through skin contact. Causes severe thermal and caustic skin irritation and burns in contact with moist skin. Symptoms may include pain, blisters and may lead to permanent damage. Potassium hydroxide formed by reaction with water may also cause burns. May be harmful if absorbed through the skin.
Eye	Very harmful through eye contact. Direct contact with metal may be corrosive and cause severe eye irritation and deep eye burns leading to permanent damage and loss of vision.
Carcinogenicity	Not listed in the IARC Monographs.
Chronic Effects	Repeated or prolonged exposure can produce damage to the blood, lungs, and upper respiratory tract. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. Prolonged or repeated inhalation of Potassium fumes may cause sores of the inner nose and nasal septum, and bronchitis to develop with cough, phlegm, and/or shortness of breath.

Section 12 - Ecological Information

Ecotoxicity	Quantitative data on the ecological effect of this product are not available.
Environmental Protection	Do not allow to enter waters, waste water, or soil!

Section 13 - Disposal Considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and disposed of according to relevant local, state and federal government regulations.

Section 14 - Transport Information

Transport Information	Dangerous Goods of Class 4.3 Dangerous When Wet are incompatible in a placard load with any of the following: - Class 1, Class 2.1, Class 5, Class 7 and Class 8.
ADG UN Number	2257
ADG Proper Shipping Name	POTASSIUM
ADG Transport Hazard Class	4.3
ADG Packing Group	I
Hazchem Code	4W
EPG Number	4N3
IERG Number	27
Local Regulations	Refer Australian Standard AS 3846-2005 'The handling and transport of dangerous cargoes in port areas'.

Section 15 - Regulatory Information

Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS).
Poisons Schedule	Not Scheduled

Section 16 - Any Other Relevant Information

Literature References

'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'.
Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand.
Safe Work Australia, 'Hazardous Chemical Information System'.
Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances'.
Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment'.

Contact Person/Point

Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT:
All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. ChemSupply Australia Pty Ltd accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.

Empirical Formula & Structural Formula

K

...End Of MSDS...