

Infosafe No™ 1CHK2 Issue Date : August 2021 RE-ISSUED by CHEMSUPP

Product Name **POTASSIUM PERSULFATE**

Classified as hazardous

1. Identification

GHS Product Identifier POTASSIUM PERSULFATE

Company Name CHEMSUPPLY AUSTRALIA PTY LTD (ABN 19 008 264 211)

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Recommended use of the chemical and restrictions on use Bleaching, oxidising agent for dyes, reducing agent in photography, antiseptic, soap manufacture, analytical reagent, polymerisation promoter, pharmaceuticals, modification of starch, flour-maturing agent, desizing of textiles and laboratory reagent.

Other Names	<u>Name</u>	<u>Product Code</u>
	POTASSIUM PERSULFATE LR	PL131
	Potassium peroxydisulfate	

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.

2. Hazard Identification

GHS classification of the substance/mixture Eye Damage/Irritation: Category 2A
Oxidizing Solids: Category 3
Acute Toxicity - Oral: Category 4
Specific target Organ Toxicity Single Exposure Category 3 (respiratory tract irritation)
Sensitization - Skin: Category 1
Skin Corrosion/Irritation: Category 2
Sensitization - Respiratory: Category 1

Signal Word (s) DANGER

Hazard Statement (s) H272 May intensify fire; oxidiser.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.

Pictogram (s) Flame over circle, Health hazard, Exclamation mark



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Precautionary statement – Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P220 Keep/Store away from clothing/.../combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P285 In case of inadequate ventilation wear respiratory protection.

Precautionary statement – Response

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330 Rinse mouth.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P311 Call a POISON CENTER or doctor/physician.
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 flooding quantities of water for extinction.

Precautionary statement – Storage

P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Precautionary statement – Disposal

P501 Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients

Ingredients	<u>Name</u>	<u>CAS</u>	<u>Proportion</u>
	Potassium persulphate	7727-21-1	100 %

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. Immediately medical attention is required.

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 Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical attention in severe cases.

Eye contact If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Seek medical attention.

First Aid Facilities Maintain eyewash fountain and safety shower 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.

5. Fire-fighting measures

Hazards from Combustion Products Oxygen is released, highly toxic fumes of sulfur oxides (SO₂, SO₃), oxides of potassium.

Specific Methods Small fire: USE FLOODING QUANTITIES OF WATER. Do not use dry chemicals, CO₂ or foam. If safe to do so, move undamaged containers from fire area. Do not move cargo if cargo has been exposed to heat.
Large fire: Flood fire area with water from a protected position. Cool

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Specific hazards arising from the chemical	containers with flooding quantities of water until well after fire is out - If impossible, withdraw from area and let fire burn. Avoid getting water inside containers: a violent reaction may occur. Dam fire control water for later disposal.
Hazchem Code	1Z
Decomposition Temp.	< 100 °C (gradually decomposes losing available oxygen, more quickly at higher temperatures, completely at about 100 °C).
Precautions in connection with Fire	Will accelerate burning when involved in a fire. May explode from heating, shock, friction or contamination. Some will react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, clothing, etc.). Fire may produce irritating, poisonous, and/or corrosive gases. Containers may explode when heated. Runoff may create fire or explosion hazard.
	Wear SCBA and chemical splash suit. Structural firefighter's uniform will provide limited protection.

6. Accidental release measures

Spills & Disposal	Do not contaminate. Keep combustibles (wood, paper, clothing, oil, etc.) away from spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use water spray to knock down vapours or divert vapour clouds. Prevent entry into waterways, drains or confined areas. Prevent exposure to heat. Dry Spill Use clean non-sparking tools to transfer material to a clean, dry plastic container and cover loosely. Move container from spill area. Small Liquid Spill Use a non-combustible material like vermiculite, sand or earth to soak up the product and place in a loosely-covered container for later disposal. Large Liquid Spill SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.
Personal Precautions	Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms.
Personal Protection	Wear protective clothing specified for normal operations (see Section 8)

7. Handling and storage

Precautions for Safe Handling	Do not use on broken skin. Wash hands thoroughly after use. Avoid contact with eyes, skin and clothing. Wear appropriate protective gloves when mixing or using. Keep away from heat, sparks and naked flames. Mix strictly according to instructions. Avoid ingestion and inhalation. Avoid contact with organic and combustible materials. Application of skin-protective barrier cream recommended. Minimize dust generation and accumulation. Use with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Rinse contaminated clothes (fire hazard) with plenty of water. Do NOT take working clothes home. Inform laundry personnel of contaminant's hazards. Protect against physical damage and moisture. Keep container dry - Never add water to this product. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.
Conditions for safe storage, including any incompatibilities	Oxidizing materials should be stored in a separate safety storage cabinet or room. Keep in a tightly closed container, stored in a cool, dry, dark, well-ventilated area. Protect against physical damage, direct sunlight and moisture. Isolate from any source of heat or ignition. Avoid storage on wood floors. Separate from incompatibles, combustibles, flammable, reducing, oxidizing, or organic substances, strong bases, or other readily oxidizable materials. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.
Storage Regulations	Refer Australian Standard AS 4326-1995 'The storage and handling of oxidizing agents'.
Storage Temperatures	Store at room temperature (15 to 25 °C recommended).

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Recommended Materials Use only plastic and stainless steel containers.

Unsuitable Materials Iron, zinc, silver compounds, organic materials.

8. Exposure controls/personal protection

Occupational exposure limit values	<u>Name</u>	STEL		TWA		<u>Footnote</u>
		<u>mg/m3</u>	<u>ppm</u>	<u>mg/m3</u>	<u>ppm</u>	
	Potassium persulphate			0.01		Peak Limitation
Other Exposure Information	<p>These Workplace 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 workplace 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.</p> <p>A time weighted average (TWA) has been established for Potassium Persulfate (Safe Work Australia) of 0.01 mg/m³ (Peak Limitation). 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. Peak Limitation - a ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes.</p>					
Appropriate engineering controls	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.					
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 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	Wear gloves of impervious material conforming to AS/NZS 2161: Occupational protective gloves - Selection, use and maintenance. Final choice of appropriate glove type will vary according to individual circumstances. This can include methods of handling, and engineering controls as determined by appropriate risk assessments. Avoid skin contact when removing gloves from hands, do not touch the gloves outer surface. Dispose of gloves as hazardous waste.					
Personal Protective Equipment	Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.					
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	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.					

9. Physical and chemical properties

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Form	Solid
Appearance	White crystals or powder.
Odour	Odourless.
Decomposition Temperature	< 100 °C (gradually decomposes losing available oxygen, more quickly at higher temperatures, completely at about 100 °C).
Melting Point	Decomposes below melting point.
Solubility in Water	Very slightly soluble in cold water: 1.75 g/100 ml @ 0 °C; slightly more soluble in hot water: 5.2 g/100 ml @ 20 °C.
Solubility in Organic Solvents	Insoluble in alcohol.
Specific Gravity	2.477
pH	Aqueous solution is acidic: pH 2.5 - 4.5 (27 g/l H ₂ O @ 25 °C).
Vapour Density (Air=1)	9.30
Evaporation Rate	Negligible at 20 °C.
Volatile Component	0 %vol @ 21 °C.
Flammability	Not combustible but assists combustion of other substances.
Explosion Properties	Strong oxidants may explode when shocked, or if exposed to heat, flame, or friction. Also may act as initiation source for dust or vapour explosions. Risk of fire and explosion on contact with combustible substances.
Molecular Weight	270.32
Oxidising Properties	Strong oxidizer. Heat of reaction with reducing agents or combustibles may cause ignition.

10. Stability and reactivity

Chemical Stability	Stable under normal temperatures and pressures. Gradually decomposes losing oxygen. Decomposes more rapidly at higher temperatures and if stored under excessive moisture. Metals other than stainless steel are apt to cause decomposition of persulfate solutions.
Conditions to Avoid	Heat, flames, ignition sources, dust generation, excess moisture and incompatibles.
Incompatible Materials	Water; iron; zinc; silver compounds; reducing agents; combustible substances; organic matter; peroxides; powdered metals; phosphorus; hydrides; halogens; acids; alkalis; chlorates and perchlorates + water; polyethylene + potassium hydroxide + water; sulfur + heat + shock + moisture.
Hazardous Decomposition Products	Oxides of sulfur, dense mists of sulfuric acid, oxygen and oxides of potassium.
Possibility of hazardous reactions	Reacts with combustible, flammable and reducing materials. Reacts in the presence of water with metals such as aluminium causing fire hazard. Reaction with a little potassium hydroxide, water and polyethylene resulted in ignition by simultaneous release of heat and oxygen. Reaction with chlorates and perchlorates at room temperature in the presence of water is explosive. Reaction with metallic dust, such as aluminium, in the presence of moisture; and with sulfur when heated with percussion in the presence of moisture results in combustion. Reaction with moisture forms ozone and sulfuric acid causing an explosion in closed containers.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Acute Toxicity - Oral	LD50 (rat): 700 mg/kg.
Ingestion	May be harmful if swallowed. Irritating to the gastro-intestinal tract, mildly toxic in large amounts. Abdominal pain, vomiting, diarrhoea may occur.

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Inhalation	Dust is irritating to the respiratory tract. Symptoms may include coughing, shortness of breath. High concentrations can cause pulmonary edema. May cause allergic respiratory reaction.
Skin	Causes irritation to skin. Symptoms include redness, itching, and pain. Can cause contact urticaria and irritant contact dermatitis. Symptoms may include itchiness, dryness or cracking, flushing, burning sensation, inflammation, erythema (redness), oedema (swelling). Symptoms may range from mild to severe. May cause burns, and moderate skin necrosis. Persulfate allergy is not uncommon and manifest itself in the form of a skin rash.
Eye	Causes irritation, redness, and pain. May cause burns, and transient corneal injury.
Respiratory sensitisation	Sensitization - Respiratory: Category 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Sensitisation	Sensitization - Skin: Category 1 H317 May cause an allergic skin reaction.
Germ cell mutagenicity	Not classified based on available information.
Carcinogenicity	Not listed in the IARC Monographs. Not classified based on available information.
Reproductive Toxicity	Not classified based on available information.
STOT-single exposure	Specific target Organ Toxicity Single Exposure Category 3 (respiratory tract irritation) H335 May cause respiratory irritation.
STOT-repeated exposure	Not classified based on available information.
Chronic Effects	Prolonged or repeated skin contact may cause sensitization dermatitis and possible destruction and/or ulceration. Repeated exposure may cause allergic respiratory reaction (asthma).
Human Effects	The occurrence of frequent skin rashes, causing both irritant dermatitis and hypersensitivity reactions, was found in workers producing ammonium and potassium persulfates. The rashes were reduced by the use of protective clothing and gloves and improved dust removal from the workplace air. Others reported asthma in hairdressers that was induced by exposure to persulfates.

12. Ecological information

Persistence and degradability	Methods for the determination of biodegradability are not applicable to inorganic substances.
Environmental Protection	Do not allow to enter waters, waste water, or soil!
Acute Toxicity - Daphnia	Daphnia magna EC0: 120 mg/l /48 h
Acute Toxicity - Bacteria	Pseudomonas putida EC50: 36 mg/l - 18h

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations.
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14. Transport information

Transport Information	Dangerous Goods of Class 5.1 Oxidising Agents are incompatible in a placard load with any of the following: - Class 1, Class 2.1, Class 2.3, Class 3, Class 4, Class 5.2, Class 7, Class 8, Fire risk substances and combustible liquids.
U.N. Number	1492
UN proper shipping name	POTASSIUM PERSULFATE

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Transport hazard class(es)	5.1
Hazchem Code	1Z
Packing Group	III
EPG Number	5A1
IERG Number	31

15. Regulatory information

Regulatory Information	All the constituents of this product are listed on the Australian Inventory of Chemical Substances (AICS), or exempted. Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
Poisons Schedule	Not Scheduled

16. Other 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'.
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Empirical Formula & Structural Formula	K2S2O8 ...End Of MSDS...

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