SAFETY DATA SHEET

PRODUCT NAME: CAUSTIC POTASH (Potassium Hydroxide)

Issue Date: October 22

IDENTIFICATION

Product Name: Caustic Potash
Other Names: Potash, Potash lye, Potassa, Potassium hydrate, Potassium Hydroxide
Product Code: ZCPOTA
Uses: Soap manufacture, bleaching, manufacture of Potassium Carbonate and Tetrapotassium pyrophosphate, electrolyte in alkaline storage batteries, absorbent for carbon dioxide and hydrogen sulphide, dyestuffs, liquid fertilizers, food additive, herbicides, electroplating, mercerising, paint removers and as reagents.
Restrictions: Restricted to Workplace only
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**

HAZARD IDENTIFICATION

GHS Classifications
Corrosive to Metals – Category 1
Acute Toxicity (Oral) – Category 3
Skin Corrosion – Category 1B
Serious Eye Damage – Category 1

Signal Word: DANGER

Hazard Statements
H290 – May be corrosive to metals
H301 – Toxic if swallowed
H314 – Causes severe skin burns and eye damage.
H318 – Causes serious eye damage.

Prevention
P234 – Keep only in original packaging.
P264 – Wash hands thoroughly after handling.
P270 – Do not eat, drink or smoke when using this product.
P260 – Do not breathe dust or mists.
P280 – Wear protective gloves/clothing and eye/face protection.

Response
P390 – Absorb spillage to prevent material damage.
P301+P330+P331 – IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P310 – Immediately call a POISON CENTRE or Doctor.

P303+P361+P353 – IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water (or shower).
P363 – Wash contaminated clothing before reuse.
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 so. Continue rinsing.
P310 – Immediately call a POISON CENTRE or Doctor.

Storage
P405 – Store locked up

Disposal
P501 - Dispose of contents and container to approved waste facility according to local regulations.

COMPOSITION & INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportion (%)
Potassium Hydroxide	1310-58-3	>90%

FIRST AID MEASURES

For advice, contact a Poisons Information Centre (Phone New Zealand 0800 764 766) or a doctor.

Swallowed: Urgent hospital treatment is likely to be needed. 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. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Transport to Hospital or Doctor without delay.

Eye: If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with 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. Continue flushing until advised to stop by the Poison Centre or a Doctor, or for at least 15 minutes. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin: If skin or hair contact occurs: Immediately flush body and clothes with large amounts of water, using safety shower if available. Quickly remove all contaminated clothing, including footwear. Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poison Centre. Transport to hospital, or doctor.

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. Transport to hospital, or doctor, without delay.

Notes to Physician: For acute or short-term repeated exposures to highly alkaline materials: Respiratory stress is uncommon but present occasionally because of soft tissue edema. Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary. Oxygen is given as indicated. The presence of shock suggests perforation and mandates an intravenous line and fluid administration. Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilization of proteins allow deep penetration into the tissue. Alkalis continue to cause damage after exposure.

FIRE FIGHTING MEASURES

Extinguishing Media: Water spray or fog, foam, dry chemical powder, carbon dioxide.

Firefighting: Alert fire brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. Use firefighting procedures suitable for surrounding area. Do not approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.

Fire/Explosion Hazard: Non-combustible. Not considered a significant fire risk, however containers may burn. May emit corrosive fumes.

Fire Incompatibility: None known.

Personal Protective Equipment: Breathing apparatus, gas-tight chemical suit. Limit exposure duration to 1 BA set/30 minutes.

ACCIDENTAL RELEASE MEASURES

Minor Spills: Remove all ignition sources. Clean up all spills immediately. Avoid contact with skin and eyes. Control personal contact by using protective equipment. Use dry clean up procedures and avoid generating dust. Place in a suitable labelled container for waste disposal.

Major Spills: Clean area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. Consider evacuation (or protect in place). Stop leak if safe to do so. Contain spill with sand, earth or vermiculite. Collect recoverable product into labelled containers for recycling. Neutralize/decontaminate residue. Collect solid residues in labelled drums for disposal. Wash area and prevent runoff into drains. After clean-up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

Emergency Response Planning Guidelines (ERPG):

- The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing life-threatening health effects is:
  Potassium Hydroxide: 150mg/m^3
- Irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:
  Potassium Hydroxide: 2mg/m^3
- Other than mild, transient adverse effects without perceiving a clearly defined odour is:
  Potassium Hydroxide: 2mg/m^3

HANDLING & STORAGE

Procedures for Handling: Do NOT use aluminum, galvanized or tin-plated containers. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. WARNING: To avoid violent reaction, ALWAYS add material to water and NEVER water to material. Avoid contact with incompatible materials. When handling, do NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Launder contaminated clothing before re-use. Use good occupational work practice. Observe manufacturer's storing and handling recommendations. Containers should have a vented cap. Do NOT repack. Use containers as originally supplied by manufacturer.

Suitable Container: Lined metal can, lined metal pail/can. Plastic pail, poly-liner drum. Packing as recommended by manufacturer. Check all containers are clearly labelled and free from leaks.

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Storage Incompatibility: Reacts vigorously with acids. Avoid strong acids. Avoid contact with copper, aluminum and their alloys, strong acids. Segregate from nitro compounds and trichloroethylene.

Storage Requirements: Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse. Store locked up. 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 containers against physical damage and check regularly for leaks. Observe manufacturers storing and handling recommendations. Do NOT store near acids, or oxidizing agents.

EXPOSURE CONTROLS & PERSONAL PROTECTION

Exposure standards: New Zealand Workplace Exposure Standard has been set by Worksafe NZ for this substance - Potassium hydroxide: Ceiling 2 mg/m3

Engineering controls: Do NOT add water to product, dilute according to suppliers' instructions.

Ventilation System: A system of local and/or general exhaust ventilation 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.

Material Data: The TLV-TWA is protective against respiratory tract irritation produced at higher concentrations.

Personal Protective Equipment (PPE): RESPIRATOR – For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. SKIN PROTECTION – Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. EYE PROTECTION – Use chemical safety goggles and/or a full-face shield where splashing is possible. Maintain eye wash fountain and quick-drench (safety shower) facilities in work area.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	White or slightly yellow solid, flakes
Odour	Odourless
Molecular Weight	56.11
Melting Range (°C)	Approx 360
Solubility in Water (g/L)	Miscible
pH (1% solution)	Approx. 13.5
Volatile Component (%vol)	Negligible
Relative Vapour Density (Air = 1)	Not available
Lower Explosive Limit (%)	Not applicable
Autoignition Temperature (°C)	Not applicable
State	Divided solid
Boiling Range (°C)	1316
Specific Gravity (water=1)	2.04 @ 20°C
pH (as supplied)	Not applicable
Evaporation Rate	Negligible
Flash Point (°C)	Not applicable
Upper Explosive Limit (%)	Not applicable
Decomposition Temperature (°C)	Not available
Viscosity	Not available

STABILITY & REACTIVITY

Conditions Contributing to Instability: Presence of incompatible materials including strong acids, copper, aluminum and their alloys. Segregate from nitro compounds and trichloroethylene. Product is considered stable. Hazardous polymerization will not occur.

TOXICOLOGICAL INFORMATION

Potential Acute Health Effects

Swallowed: Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150g may be fatal or may produce serious damage to the health of the individual. Ingestion of alkaline corrosives may produce burns around the mouth, ulcerations and swelling of the mucous membranes, profuse saliva production, with an inability to speak or swallow. Both the oesphagus and stomach may experience burning pain; vomiting and diarrhea may follow. Epiglottal swelling result in respiratory distress and asphyxia; shock can occur. Narrowing of the oesphagus, stomach or stomach valve may occur immediately or after a long delay (weeks or years). Severe exposure can perforate the oesophagus or stomach leading to infections of the chest or abdominal cavity, with low chest pain, abdominal stiffness and fever. All of the above can cause death.

Eye: If applied to the eyes, this material causes severe eye damage. Direct eye contact with corrosive bases can cause pain and burns. There may be swelling, epithelium destruction, clouding of the cornea and inflammation of the iris. Mild cases often resolve; severe cases can be prolonged with complications such as persistent swelling, scarring, permanent cloudiness, bulging of the eye, cataracts, eyelids glued to the eyeball and blindness.

Skin: The material can produce severe chemical burns following direct contact with the skin. Skin contact with alkaline corrosives may produce severe pain and burns; brownish stains may develop. The corroded area may be soft, gelatinous and necrotic; tissue destruction may be deep. Skin contact is not thought to produce harmful health effects. Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry though wounds, lesions or abrasions. Good hygiene practices require that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Entry into the blood-stream, through for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

Inhaled: The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhaling corrosive bases may irritate the respiratory tract. Symptoms include cough, choking, pain and damage to the mucous membrane. In severe cases, lung swelling may develop, sometimes after a delay of hours to days. There may be low blood pressure, a weak and rapid pulse, and cracking sounds. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. The material is not thought to produce adverse health effects following inhalation. Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and suitable control measures be used in an occupational setting.

Toxicity: Rat, LD50, 273 mg/kg

Irritation: Skin (human) 50mg/24h SEVERE

ECOLOGICAL INFORMATION

Ecological Toxicity: Fish, fresh water (*Gambusia Affinis)* 96hr LC50 80mg/l

Bio accumulative: No
Not rapidly degradable: No

DISPOSAL CONSIDERATIONS

Recycle wherever possible. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. Treat and neutralize at an approved treatment plant. Treatment should involve: mixing or slurrying in water, neutralization followed by, burial in a licensed landfill or incineration in a licensed apparatus (after admixture with suitable combustible materials). Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed. Containers may still present a chemical hazard/danger when empty. Return to supplier for reuse/recycling if possible.

TRANSPORT INFORMATION

UN Number: 1813
Proper Shipping name: Potassium Hydroxide, Solid
Dangerous Goods Class: Class 8 - Corrosive
Packing group: II
Hazchem Code: 2X

REGULATORY INFORMATION

HSNO Classifications: 8.1A, 6.1C (O), 8.2B, 8.3A
EPA Approval #: HSR001546

Restrictions: Potassium Hydroxide has an Acute Toxicity – Category 3 classification, therefore it is Restricted to Workplace only under the Hazardous Substances (Hazardous Property Controls) Notice 2017

OTHER INFORMATION

End of SDS.

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