PORTLAND CEMENTS AND BLENDS

1. Identification

Product Names: Portland Cement and Blends

Recommended Use: Cement for the production of concrete, mortar, and paste.

UN Number: Not Applicable

Proper Shipping Name: Not Applicable

Other names: RapidCem - High Early Strength Cement Type HE
Ultracem - Holcim Portland Cement Type GP
Class G Cement, White Cement, Pavecem

Supplier:

Name: Holcim NZ Ltd
Phone: 0800 HOLCIM (465 246)
Address: Unit 1, Show Place,
Addington
Christchurch, 8024
Website: www.holcim.co.nz

Emergency Contacts: Emergency Services (Fire, Ambulance, Police) – Dial 111
National Poisons Information Centre – 0800 764 766 (0800 POISON)
Company Contact – 0800 HOLCIM (465 246)

2. Hazard Identification

Statement of Hazardous Nature:
This preparation is classified as a health or environmental hazard according to the Hazardous Substances (Hazard Classification) Notice 2020.

Not classified as a Dangerous Good according to NZS 5433.

Hazard Classification:

Skin irritation Category 2	(6.3A)
Skin sensitisation Category 1	(6.5B)
Skin corrosion Category 1C†	(8.2C)
Serious eye damage Category 1	(8.3A)
Specific target organ toxicity – repeated exposure Category 2*	(6.9B)
Specific target organ toxicity – single exposure Category 3 (6.1E (respiratory)) respiratory Tract irritation	

* Classification only relates to the addition of Fly Ash in the cement blend (see composition in Section 3)
† Classification only relates to the addition of Calcium Oxide in the cement blend

Hazard Statements:

DANGER
May cause respiratory irritation.
Causes skin irritation.
May cause an allergic skin reaction.
May cause damage to organs (lungs) through prolonged or repeated exposure through inhalation.*
Causes severe skin burns and eye damage.†
Causes serious eye damage.

Prevention Statements:
Do not breathe dust.
Wash hands and any exposed skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated clothing should not be allowed out of the workplace.
Wear protective gloves and eye/face protection.

Note: The properties of cement and associated hazards change when water is added.

3. Composition & Information on Ingredients

Ingredient	CAS Number	Concentration (%)		
		Ultracem White Cement Class G Cement	Rapidcem	Pavecem
Portland Cement	65997-15-1	60 – 100%	85 – 95%	60%
Fly Ash	68131-74-8	-	<3%	-
Calcium Oxide (Lime)	1305-78-8	-	-	40%
Limestone	1317-65-3	-	<10%	-
Gypsum	13397-24-5	-	<5%	-
Quartz (respirable fraction)	14808-60-7	-	<0.1%	-
Silica Fumes	69012-64-2	-	-	-
Portland Cement includes				
Calcium carbonate (limestone)	13397-26-7	< 10%	< 10%	< 10%
Calcium sulphate (gypsum)	13997-24-5	5%	5%	5%
Silica (quartz)*	14808-60-7	18 – 22%	18 – 22%	18 – 22%
*Crystalline silica		< 0.05%	< 0.05%	< 0.05%

4. First Aid Measures

New Zealand Poisons & Hazardous Chemicals National Information Centre
phone 0800 POISON – 0800 764 766

Inhalation: IF INHALED, remove victim to fresh air and keep at res in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician if you feel unwell or experience breathing difficulties.

Skin: IF ON SKIN (or hair), wash with plenty of soap and water. Take off contaminated clothing and wash before re-use. If skin irritation or rash occurs, seek medical advice/attention.

Eyes: IF IN EYES, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub eyes as this may cause possible corneal damage by mechanical stress. Immediately call a POISON CENTRE or doctor/ physician.

Ingestion: IF SWALLOWED, rinse mouth and lips with water. Do NOT induce vomiting. Immediately call a POISON CENTRE or doctor/physician.

Advice to Doctor: Treat symptomatically. Wet cement is corrosive to skin and eye tissue and may cause caustic type burns. Cement burns with little warning – little heat is sensed.

5. Fire Fighting Measures

Flammability: Non-combustible, non-explosive.

Extinguishing media: Use appropriate for surrounding materials. Prevent contamination of drains or water ways.

Hazardous Combustion products: May evolve toxic gases if strongly heated. Carbon and nitrogen oxides may be formed in any fire.

Instructions to firefighters: None specified.

6. Accidental Release Measures

Protect yourself and others from harm. Wear appropriate protective equipment (see Section 8) including suitable respiratory protection in dusty environments or when ventilation is insufficient.

Spills: Use dry clean-up methods that do not disperse dust into the air such as gentle sweeping or an industrial vacuum cleaner with filters suitable for this product. Do not use compressed air. Avoid inhalation of dust and contact with skin.

Do not use water for cleaning bulk material as this will cause cement to set. Prevent spill from entering drain or waterways. Contain spillage, collect, and place in suitable containers for reuse or disposal. If water is used to clean up residual material, ensure the water is recovered and neutralised before disposal. If product is spilt into a waterway notify the Regional Council.

7. Handling & Storage

Safe Handling

The material should be kept free from moisture until used.
Do not breathe dust. Avoid eye and skin contact. Do not allow wet cement to remain in contact with skin.
Wash hands / exposed skin thoroughly after handling.
Immediately after working with cement or cement-containing materials, workers should shower with soap and water.
Promptly remove dusty clothing or clothing which is wet with cement or associated liquid and launder before reuse.
Use only outdoors or in a well-ventilated area.
Do not eat, drink, or smoke when using this product.
Wear protective gloves and eye/face protection.

Certified Handler: Not required.

Storage

Store locked up.
Store in a well-ventilated area. Keep container / package tightly closed.
Keep dry and store off the ground.

8. Exposure Controls & Personal Protection

Exposure Standards

Workplace Exposure Standards (WES):

Ingredient	CAS Number	TWA	STEL
Portland Cement (dsen)	65997-15-1	3 mg/m3	-
Calcium Oxide	1305-78-8	2 mg/m3	-
Limestone	1317-65-3	10 mg/m3	-
Silica, crystalline (all forms) 6.7A	14808-60-7	0.05 mg/m3 (r)	-
Silica fume	69012-64-2	1 mg/m^3 (r)	-

dsen Dermal sensitiser
6.7A Confirmed carcinogen
(r) Value for respirable dust

Data source: *Workplace Exposure Standards and Biological Indices (12th Edition, Nov 2020, WorkSafe)*

Biological Exposure Indices

No exposure standards have been set for this product or its ingredients in the *Workplace Exposure Standards and Biological Indices* (12th Edition, Nov 2020, WorkSafe).

Engineering Controls

Ventilation: Use only outdoors or in a well-ventilated area. An exhaust fan ducted from near point of dust generation can be used to control airborne dust levels. When handling large amounts, a dust collection system should be considered. Dust levels and any other discharge of dust should comply with Health and Safety rules, Resource Consents and any relevant District or Regional rules.

Personal Protection (PPE)

Precautions must be taken. Cement burns with little warning - little heat is sensed on the skin during this process. Do not kneel in wet cement.
Wear protective gloves and eye/face protection. Contaminated clothing should not be allowed out of the workplace.

Eyes/Face: Use tight fitting goggles or protective eyewear in dusty environments. Eye protection must comply with AS/NZS 1337.

Skin: Use impervious, abrasion- and alkali-resistant gloves and barrier creams, boots and protective clothing to protect the skin from prolonged contact with wet cement in plastic concrete, mortar or slurries. The glove material must be impermeable and resistance to the product (in accordance with AS/NZS 2161). Consult your glove supplier for additional information on glove selection.

Respiratory protection: In dusty environments where engineering controls are inadequate to minimize dust exposure, the use of an approved Class P1 or P2 particulate disposable respirator (not a nuisance dust mask) is recommended. At high dust levels greater protection may be required. Respiratory protection must comply with AS/NZS 1716 and be maintained in accordance with AS/NZS 1715.

9. Physical & Chemical Properties

Appearance: Grey or white powder.
Odour: No odour.
Odour threshold: No data available.
pH: Alkaline, approx. 12
Boiling point: Not applicable
Melting point: ~1,350ºC
Flash point: Not applicable
Autoignition Temp: Not applicable
Decomposition Temp: No data available
Flammability: Non-flammable.

Lower Flammability Limit (LEL): Not applicable
Upper Flammability Limit (UEL): Not applicable
Vapour pressure: Not applicable
Vapour density (Air =1): No data available.
Specific gravity (H_2O=1): 2.93 – 3.09
Solubility (water): Slight (0.1 – 1.0%)
Viscosity (dynamic): Not applicable
Viscosity (kinematic): No data available
Evaporation rate: Not applicable.
Partition coefficient (n-octanol/water): No data available.

10. Stability & Reactivity

Stability: Stable under normal conditions of use and storage. Keep dry until used.

Conditions to avoid: Unintended contact with water, excessive dust generation.

Incompatible / Materials to avoid: Incompatible with oxidising agents (e.g. hypochlorites), ethanol, acids.

Aluminium powder and other alkali and alkaline earth elements will react in wet mortar or concrete, liberating hydrogen gas.

Hazardous decomposition products: May evolve toxic gases if heated to decomposition.

Hazardous polymerisation: Does not occur.

11. Toxicological Information

Health Effects / Symptoms of Exposure

Acute Exposure (short term)

Inhalation: May cause respiratory irritation. Inhalation of dust can cause irritation and inflammation of the upper respiratory system.

Skin: Causes skin irritation. May cause an allergic skin reaction. Contact with powder may result in rash or dermatitis. Wet cement, especially as an ingredient in plastic (unhardened) concrete, mortar or slurries, can dry the skin and cause caustic burns.

Eyes: Causes serious eye damage. Direct contact with the eyes can cause irritation, lacrimation (formation of tears), inflammation or burns of the cornea and possible permanent damage.

Ingestion: Not an expected route of entry. Ingestion may result in burns to the mouth and throat, nausea, vomiting and abdominal pain.

Aspiration hazard: This product is a solid and aspiration hazards are not expected to occur

Chronic Exposure (long term)

Respiratory or Skin sensitisation: Contact sensitiser; may cause an allergic skin rection. Portland Cement is a known dermal sensitiser.

Mutagenicity: Not expected to be a mutagen.

Carcinogenicity: Product is not classified as a carcinogen. Note: This product may contain varying amounts of crystalline silica which is classified as carcinogenic to humans (IARC Group 1). Repeated exposure to dust may result in chronic inflammation of the respiratory system. Repeated exposure to crystalline silica may cause bronchitis, silicosis, and other respiratory disorders.

Reproductive Toxicity: May cause damage to organs (lungs) through prolonged or repeated exposure through inhalation (when Fly Ash is a component of the cement blend).

Specific Target Organ Toxicity (STOT): May cause damage to organs (lungs) through prolonged or repeated exposure through inhalation

Other effects: Cement may contain trace [less than 0.05%] amounts of chromium salts or compounds including hexavalent chromium, or other metals found to be hazardous or toxic in some chemical forms. These metals are mostly present as trace substitutions within the principal minerals.

Toxicological Data

No toxicological data available for the product or its ingredients.

Biological Exposure Indices

No biological exposure indices allocated.

12. Ecological Information

Avoid release to the environment. Do not allow to enter drains or waterways.

Persistence in environment: No data available.
Mobility: No data available.
Biodegradability: No data available.

Ecotoxicological Data

The product forms an alkaline slurry when mixed with water which may affect the pH of aquatic systems if contact occurs in large quantities. Once set, product is persistent and has low degradability.

Calcium hydroxide (*forms from reaction of calcium oxide with water*)	LC50 (96hr):	33.9mg/L (Clarias gariepinus (Zambezi barbel) [Fish])
	Bioaccumulative:	No
	Rapidly degradable :	Yes

Data source: *Chemical Classification and Information Database (CCID)*

13. Disposal Considerations

Dust from product is hazardous. Small amounts of material can be disposed of as common waste or returned to the container for later use if it is not contaminated. Large amounts may require special handling. Material should be kept out of storm water and sewer drains. Any discharge during clean-up should comply with Resource Consent requirements and any relevant District or Regional Council rules. Containers / packaging may only be recycled if clean and free of residue as to be non-hazardous.

14. Transport Information

Not classified as a Dangerous Good according to NZS 5433:2007

15. Regulatory Information

HSNO Approval

HSNO Group Standard:

Portland cement and blends (other than Pavecem)	Construction Products (Subsidiary Hazard) Group Standard 2020 – HSR002544
Pavecem	Construction Products (Corrosive [8.2C]) Group Standard 2020 – HSR002542

Hazard Classification under GHS7:	**(Corresponding HSNO classes)**
Skin irritation Category 2	(6.3A)
Skin sensitisation Category 1	(6.5B)
Skin corrosion Category 1C†	(8.2C)
Serious eye damage Category 1	(8.3A)
Specific target organ toxicity – repeated exposure Category 2*	(6.9B)
Specific target organ toxicity – single exposure Category 3 respiratory tract irritation	(6.1E (*respiratory)*)

Health and Safety at Work (Hazardous Substances) Regulations

IMPORTANT: Quantities of all hazardous substances present at a site contribute to Hazardous Substances Control thresholds.

Location Certification: Not required
Tracking: Not required
Certified Handlers: Not Required
Secondary containment: Not required (solid)

Refer to the following for full details:
- Construction Products Group Standard(s) (available at www.epa.govt.nz)
- Health and Safety at Work (Hazardous Substances) Regulations (available at www.legislation.govt.nz)

16. Other Information

Hazard Classifications
6.1E (respiratory) – Substances that are a respiratory tract irritant.

6.3A – Substances that are irritating to the skin.
6.5B – Substances that are contact (dermal) sensitisers.
6.9B – Substances that have specific systemic or target organ toxicity.
8.2C – Substances that are corrosive to dermal tissue.
8.3A – Substances that are corrosive to ocular tissue.

Note: Crystalline Silica (quartz) in respirable form is a known or presumed human carcinogen, however the EPA classification information includes the following statement:

EXPERT JUDGEMENT: This substance only triggers 6.7A if it is in the form of a fine respirable dust in an occupational (chronic exposure) setting.
Total respirable crystalline silica reported at less than 0.05%; however, it should be assumed that silica content is sufficient to create a silica hazard in work conditions where fine, respirable dust becomes airborne.

Abbreviations / Terminology:

AS/NZS	Joint Australian New Zealand Standard
AS/NZS 1337	Personal eye-protection
AS/NZS 1715	Selection, use and maintenance of respiratory protective equipment
AS/NZS 1716	Respiratory protective devices
AS/NZS 2161	Occupational protective gloves
CAS#	Chemical Abstract Service number (a unique identifier for chemicals)
dsen	Dermal sensitiser
HSNO	(New Zealand) Hazardous Substances and New Organisms Act
IARC	International Agency for Research on Cancer
LD50	Median lethal dose, being a statistically derived single dose of a substance that can be expected to cause death in 50 percent of animals.
NZIoC	New Zealand Inventory of Chemicals
NZS 5433	Transport of Dangerous Goods on Land
TWA	Time Weighted Average
WES	Workplace Exposure Standard
6.7A	Substances that are known or presumed human carcinogens

Prepared with reference to:

- *Hazardous Substances (Safety Data Sheets) Notice 2017* published by Environmental Protection Authority, New Zealand.

Current Version: 1 November 2021

Revision Information: SDS may be revised from time to time, please ensure you have a current copy.
This revision: Updated existing SDS to current NZ requirements following change to GHS7 and for new composition of RapidCem cement blend.
This revision: 1 November 2021
Previous revision dated: August 2020

Disclaimer:

This safety data sheet attempts to describe as accurately as possible the potential exposures associated with normal use of the product described herein. Health and safety precautions in the data sheet may not be adequate for all individuals and/or situations. Users have the responsibility to evaluate and use this product safely and to comply with all applicable laws and regulations.

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