

Ardex K120 Ardex (Ardex NZ)

Chemwatch: **5460-23** Version No: **2.1.1.1** Safety Data Sheet according to the Health and Safety at Work (Hazardous Substances) Regulations 2017 Chemwatch Hazard Alert Code: 3

Issue Date: **31/03/2021** Print Date: **31/03/2021** S.GHS.NZL.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	Ardex K120
Chemical Name	Not Applicable
Synonyms	Not Available
Chemical formula	Not Applicable
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses Cementitious floor leveller for internal use.

Details of the supplier of the safety data sheet

Registered company name	Ardex (Ardex NZ)	
Address	32 Lane Street Woolston Christchurch New Zealand	
Telephone	34 3384 3029	
Fax	+64 3384 9779	
Website	Not Available	
Email	Not Available	

Emergency telephone number

Association / Organisation	Ardex (Ardex NZ)	
Emergency telephone numbers	+64 3 373 6900	
Other emergency telephone numbers	0800 764 766 (NZ NPC)	

SECTION 2 Hazards identification

Classification of the substance or mixture

Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation. Not regulated for transport of Dangerous Goods.

ChemWatch Hazard Ratings

	Min	Max	
Flammability	1		
Toxicity	1	1	0 = Minimum
Body Contact	3		1 = Low
Reactivity	1	1	2 = Moderate
Chronic	2		3 = High 4 = Extreme

Classification ^[1]	Skin Corrosion/Irritation Category 2, Skin Sensitizer Category 1, Serious Eye Damage/Eye Irritation Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Specific target organ toxicity - single exposure Category 1, Specific target organ toxicity - repeated exposure Category 1	
Legend:	1. Classified by Chernwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI	
Determined by Chemwatch using GHS/HSNO criteria	6.1E (respiratory), 6.3A, 8.3A, 6.5B (contact), 6.9A	



Signal word Danger

Hazard statement(s)

H315	Causes skin irritation.	
H317	May cause an allergic skin reaction.	
H318	Causes serious eye damage.	
H335	May cause respiratory irritation.	
H370	Causes damage to organs.	
H372	Causes damage to organs through prolonged or repeated exposure.	

Precautionary statement(s) Prevention

P260	Do not breathe dust/fume.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P270	Do not eat, drink or smoke when using this product.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
P308+P311	P308+P311 IF exposed or concerned: Call a POISON CENTER/doctor/physician/first aider.	
P310	Immediately call a POISON CENTER/doctor/physician/first aider.	
P302+P352	IF ON SKIN: Wash with plenty of water.	

Precautionary statement(s) Storage

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

Precautionary statement(s) Disposal

P501 Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
14808-60-7.	30-60	graded sand
65997-15-1	10-30	portland cement
471-34-1	10-30	calcium carbonate
65997-16-2	1-10	calcium aluminate cement
7778-18-9	1-10	calcium sulfate
13397-24-5	<5	gypsum
1317-65-3	<5	limestone
14808-60-7	<1	silica crystalline - quartz
Not Available	balance	Ingredients determined not to be hazardous

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	 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 Poisons Information 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 Contact	 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 Poisons Information Centre.

	Transport to hospital, or doctor.
Inhalation	 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.
Ingestion	 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. Seek medical advice.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

- 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 solubilisation of proteins allow deep penetration into the tissue.
- Alkalis continue to cause damage after exposure.

INGESTION:

- Milk and water are the preferred diluents
- No more than 2 glasses of water should be given to an adult.
- Neutralising agents should never be given since exothermic heat reaction may compound injury.
- * Catharsis and emesis are absolutely contra-indicated.
- * Activated charcoal does not absorb alkali.
- * Gastric lavage should not be used.
- Supportive care involves the following:
- Withhold oral feedings initially.
- If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).
- SKIN AND EYE:
- Injury should be irrigated for 20-30 minutes.
- Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

SECTION 5 Firefighting measures

Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility	Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting	 Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire fighting procedures suitable for surrounding area.
Fire/Explosion Hazard	 Solid which exhibits difficult combustion or is difficult to ignite. Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited; once initiated larger particles up to 1400 microns diameter will contribute to the propagation of an explosion. A dust explosion may release large quantities of gaseous products; this in turn creates a subsequent pressure rise of explosive force capable of damaging plant and buildings and injuring people. Decomposes on heating and produces: carbon monoxide (CO) carbon dioxide (SIO2) sulfur oxides (SIO2) metal oxides other pyrolysis products typical of burning organic material. When aluminium oxide dust is dispersed in air, firefighters should wear protection against inhalation of dust particles, which can also contain hazardous substances from the fire absorbed on the alumina particles. May emit poisonous furmes.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

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Methods and material for containment and cleaning up

Minor Spills	 Clean up waste regularly and abnormal spills immediately. Avoid breathing dust and contact with skin and eyes. Wear protective clothing, gloves, safety glasses and dust respirator. Use dry clean up procedures and avoid generating dust.
Major Spills	 Clear 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 all means available, spillage from entering drains or water courses.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	 Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions) Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame. Establish good housekeeping practices. Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.
Other information	 Store in original containers. Keep containers securely sealed. Store in a cool, dry area protected from environmental extremes. Store away from incompatible materials and foodstuff containers.

Conditions for safe storage, including any incompatibilities

Suitable container	 Polyethylene or polypropylene container. Check all containers are clearly labelled and free from leaks.
Storage incompatibility	 Avoid strong acids, acid chlorides, acid anhydrides and chloroformates. Avoid contact with copper, aluminium and their alloys. Avoid reaction with oxidising agents

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	graded sand	Quartz respirable dust	0.05 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	portland cement	Portland cement respirable dust	1 mg/m3	Not Available	Not Available	dsen-Dermal sensitiser
New Zealand Workplace Exposure Standards (WES)	portland cement	Portland cement	3 mg/m3	Not Available	Not Available	dsen-Dermal sensitiser
New Zealand Workplace Exposure Standards (WES)	calcium carbonate	Marble (Calcium carbonate)	10 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	calcium carbonate	Limestone (Calcium carbonate)	10 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	calcium carbonate	Calcium carbonate	10 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	calcium sulfate	Calcium sulphate (Gypsum, Plaster of Paris)	10 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	calcium sulfate	Plaster of Paris (Calcium sulphate)	10 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	gypsum	Calcium sulphate (Gypsum, Plaster of Paris)	10 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	gypsum	Plaster of Paris (Calcium sulphate)	10 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	limestone	Calcium carbonate	10 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	limestone	Limestone (Calcium carbonate)	10 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	limestone	Marble (Calcium carbonate)	10 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	silica crystalline - quartz	Quartz respirable dust	0.05 mg/m3	Not Available	Not Available	Not Available

Ingredient	TEEL-1	TEEL-2		TEEL-3	
graded sand	0.075 mg/m3	33 mg/m3		200 mg/m3	
calcium carbonate	45 mg/m3	210 mg/m3		1,300 mg/m3	
limestone	45 mg/m3	210 mg/m3		1,300 mg/m3	
silica crystalline - quartz	0.075 mg/m3	33 mg/m3		200 mg/m3	
Ingredient	Original IDLH	Original IDLH		Revised IDLH	
graded sand	25 mg/m3 / 50 mg/m3	25 mg/m3 / 50 mg/m3		Not Available	
portland cement	5,000 mg/m3		Not Ava	Not Available	
calcium carbonate	Not Available		Not Ava	Not Available	
calcium aluminate cement	Not Available	Not Available		Not Available	
calcium sulfate	Not Available	Not Available		Not Available	
gypsum	Not Available	Not Available		Not Available	
limestone	Not Available	Not Available		ilable	
silica crystalline - quartz	25 mg/m3 / 50 mg/m3	25 mg/m3 / 50 mg/m3		ilable	

Occupational Exposure Banding				
Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit		
calcium aluminate cement	E	≤ 0.01 mg/m³		
Notes:	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.			

Exposure controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
 Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure. Chemical goggles.whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted. Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection. Alternatively a gas mask may replace splash goggles and face shields.
See Hand protection below
 Elbow length PVC gloves NOTE: The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present. polychloroprene. nitrile rubber. butyl rubber.
See Other protection below
 Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent] Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent] Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely. Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood. Overalls.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the *computer-generated* selection: Ardex K120

P.V.C apron.
Barrier cream.
Skin cleansing cream.

Material	CPI
NATURAL RUBBER	А
NITRILE	A

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	-	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3	-
		Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

* - Negative pressure demand ** - Continuous flow

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Use approved positive flow mask if significant quantities of dust becomes airborne.
 Try to avoid creating dust conditions.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance Off-white powder with characteristic odour; slightly mixes with water.

Physical state	Divided Solid	Relative density (Agua= 1)	1.3 approx. (bulk)
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling range (°C)	Not Applicable	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Applicable	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Applicable
Vapour pressure (kPa)	Not Applicable	Gas group	Not Available
Solubility in water	Partly miscible	pH as a solution (1%)	11 approx.
Vapour density (Air = 1)	Not Applicable	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	e section 7	
Chemical stability	 Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur. 	
Possibility of hazardous reactions	See section 7	

Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

	The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
Inhaled	Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Inhalation of dusts, generated by the material during the course of normal handling, may be damaging to the health of the individual. Inhalation may result in ulcers or sores of the lining of the nose (nasal mucosa), and lung damage. 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. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.
	Effects on lungs are significantly enhanced in the presence of respirable particles.
Ingestion	Accidental ingestion of the material may be damaging to the health of the individual. Chromate salts are corrosive and produce cellular damage to tissue. Ingestion may produce inflammation of the digestive tract, nausea, vomiting and abdominal pain. Not normally a hazard due to the physical form of product. The material is a physical irritant to the gastro-intestinal tract
	The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.
	Though considered non-harmful, slight irritation may result from contact because of the abrasive nature of the aluminium oxide particles. Thus it may cause itching and skin reaction and inflammation. Four students received severe hand burns whilst making moulds of their hands with dental plaster substituted for Plaster of Paris. The dental
Skin Contact	plaster known as "Stone" was a special form of calcium sulfate hemihydrate containing alpha-hemihydrate crystals that provide high compression strength to the moulds. Beta-hemihydrate (normal Plaster of Paris) does not cause skin burns in similar circumstances. Skin contact may result in severe irritation particularly to broken skin. Ulceration known as "chrome ulcers" may develop. Chrome ulcers and ski
Skii Contact	cancer are significantly related. Handling wet cement can cause dermatitis. Cement when wet is quite alkaline and this alkali action on the skin contributes strongly to cement contact dermatitis since it may cause drying and defatting of the skin which is followed by hardening, cracking, lesions developing, possible infections of lesions and penetration by soluble salts. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin
Eve	prior to the use of the material and ensure that any external damage is suitably protected. If applied to the eyes, this material causes severe eye damage.
суе	Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Animal testing shows long term exposure to aluminium oxides may cause lung disease and cancer, depending on the size of the particle. The
	smaller the size, the greater the tendencies of causing harm. Red blood cells and rabbit alveolar macrophages exposed to calcium silicate insulation materials in vitro showed haemolysis in one study but not in another. Both studies showed the substance to be more cytotoxic than titanium dioxide but less toxic than asbestos. In a small cohort mortality study of workers in a wollastonite quarry, the observed number of deaths from all cancers combined and lung cancer
Chronic	were lower than expected. Wollastonite is a calcium inosilicate mineral (CaSiO3). Cement contact dermatitis (CCD) may occur when contact shows an allergic response, which may progress to sensitisation. Sensitisation is due to soluble chromates (chromate compounds) present in trace amounts in some cements and cement products. Soluble chromates readily penetrate intact skin. Cement dermatitis can be characterised by fissures, eczematous rash, dystrophic nails, and dry skin; acute contact with highly alkaline mixtures may cause localised necrosis.
	Pure calcium carbonate does not cause the disease pneumoconiosis probably due to its rapid elimination from the body. However, its unsterilise particulates can infect the lung and airway to cause inflammation.
	High blood concentrations of calcium ion may give rise to dilation of blood vessels and depress heart function, leading to low blood pressure and fainting (syncope). Calcium ions enhance the effects of digitalis on the heart, and may precipitate digitalis poisoning. Calcium salts also reduce the absorption of tetracyclines. In newborns, giving calcium during treatment has resulted in calcification of soft tissue.
	Overexposure to the breathable dust may cause coughing, wheezing, difficulty in breathing and impaired lung function. Chronic symptoms may include decreased vital lung capacity and chest infections. Repeated exposures in the workplace to high levels of fine-divided dusts may produc a condition known as pneumoconiosis, which is the lodgement of any inhaled dusts in the lung, irrespective of the effect. This is particularly true when a significant number of particles less than 0.5 microns (1/50000 inch) are present.
	Chromium (III) is an essential trace mineral. Chronic exposure to chromium (III) irritates the airways, malnourishes the liver and kidneys, causes fluid in the lungs, and adverse effects on white blood cells, and also increases the risk of developing lung cancer. Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.

4 . I	TOXICITY	IRRITATION
Ardex K120	Not Available	Not Available
	ΤΟΧΙCITY	IRRITATION
graded sand	Oral(Rat) LD50; 500 mg/kg ^[2]	Not Available
	ΤΟΧΙΟΙΤΥ	IRRITATION
portland cement	Not Available	Not Available
	ΤΟΧΙCΙΤΥ	IRRITATION
calcium carbonate	dermal (rat) LD50: >2000 mg/kg ^[1]	Eye (rabbit): 0.75 mg/24h - SEVERE
	Inhalation(Rat) LC50; >3 mg/l4 ^[1]	Eye: no adverse effect observed (not irritating) ^[1]

Respiratory or Skin	V STOT - Repe	eated Exposure	✓
Serious Eye Damage/Irritation	✓ STOT - S	ingle Exposure	~
Skin Irritation/Corrosion		Reproductivity	×
Acute Toxicity		Carcinogenicity	×
CALCIUM SULFATE & GYPSUM	Gypsum (calcium sulfate dehydrate) irritates the skin, eye, mucous membranes, and airways. A series of studies involving Gypsum industry workers in Poland reported chronic, non-specific airways diseases. Repeat dose toxicity: Examination of workers at a gypsum manufacturing plant found restrictive defects on long-function tests in those who were chronically exposed to gypsum dust. Synergistic/antagonistic effects: Gypsum appears to be protective on quartz toxicity in animal testing.		
CALCIUM CARBONATE & LIMESTONE	No evidence of carcinogenic properties. No evidence of mutagenic or teratogenic effects. The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.		
PORTLAND CEMENT & CALCIUM CARBONATE & CALCIUM ALUMINATE CEMENT & CALCIUM SULFATE & GYPSUM	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.		
GRADED SAND & PORTLAND CEMENT & CALCIUM ALUMINATE CEMENT & GYPSUM	No significant acute toxicological data identified in literature search.		
SILICA CRYSTALLINE - QUARTZ	The International Agency for Research on Cancer (IARC) has classified occupational exposures to respirable (<5 um) crystalline silica as being carcinogenic to humans . This classification is based on what IARC considered sufficient evidence from epidemiological studies of humans for the carcinogenicity of inhaled silica in the forms of quartz and cristobalite. Crystalline silica is also known to cause silicosis, a non-cancerous lung disease. Intermittent exposure produces; focal fibrosis, (pneumoconiosis), cough, dyspnoea, liver tumours. * Millions of particles per cubic foot (based on impinger samples counted by light field techniques). NOTE : the physical nature of quartz in the product determines whether it is likely to present a chronic health problem. To be a hazard the material must enter the breathing zone as respirable particles.		
	WARNING: For inhalation exposure ONLY: This substance has been class	ssified by the IARC	C as Group 1: CARCINOGENIC TO HUMANS
LIMESTONE	distribution of the substance and the opportunities for contact with it are e Eye (rabbit) 0.75: mg/24h -	equally important.	
PORTLAND CEMENT	The following information refers to contact allergens as a group and may Contact allergies quickly manifest themselves as contact eczema, more re eczema involves a cell-mediated (T lymphocytes) immune reaction of the involve antibody-mediated immune reactions. The significance of the con	arely as urticaria of delayed type. Oth	or Quincke's oedema. The pathogenesis of contact ner allergic skin reactions, e.g. contact urticaria,
	specified data extracted from RTECS - Register of Toxic Effect of chemic		
Legend:	Oral(Rat) LD50; 500 mg/kg ^[2] 1. Value obtained from Europe ECHA Registered Substances - Acute tox		ained from manufacturer's SDS Unless otherwise
silica crystalline - quartz		IRRITATION Not Available	
		Skin: no adverse	e effect observed (not irritating) ^[1]
			0 mg/24h-moderate
limestone	Oral(Rat) LD50; 6450 mg/kg ^[2]	Eye: no adverse	effect observed (not irritating) ^[1]
	ΤΟΧΙCITY	IRRITATION	
	Oral(Rat) LD50; >1581 mg/kg ^[1]		
gypsum	Inhalation(Rat) LC50; >3.26 mg/l4 ^[1]	Not Available	
	ΤΟΧΙΟΙΤΥ	IRRITATION	
	Oral(Rat) LD50; >1581 mg/kg ^[1]		
calcium sulfate	Inhalation(Rat) LC50; >3.26 mg//4 ^[1]	Not Available	
	тохісіту	IRRITATION	
	Oral(Rat) LD50; >2000 mg/kg ^[1]		
calcium aluminate cement	dermal (rat) LD50: >2000 mg/kgl ¹] Inhalation(Rat) LC50; 1.9 mg/l4 ^[1]	Not Available	
		IRRITATION Not Available	
			e effect observed (not irritating) ^[1]

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Mutagenicity X

Aspiration Hazard

×

Legend: X

Data either not available or does not fill the criteria for classification
 Data available to make classification

SECTION 12 Ecological information

ity					
	Endpoint	Test Duration (hr)	Species	Value	Source
Ardex K120	Not Available	Not Available	Not Available Not Avail		Not Available
	Endpoint	Test Duration (hr)	Species	Value	Source
graded sand	Not Available	Not Available	Not Available	Not Available	Not Available
	Endpoint	Test Duration (hr)	Species	Value	Source
portland cement	Not Available	Not Available	Not Available	Not Available	Not Available
	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	6	Fish	4-320mg/l	4
calcium carbonate	LC50	96	Fish	>229.245mg/L	4
	EC50	72	Algae or other aquatic plants	>14mg/l	2
	Endpoint	Test Duration (hr)	Species	Value	Sourc
	LC50	96	Fish	>100mg/l	2
calcium aluminate cement	NOEC(ECx)	72	Algae or other aquatic plants	Algae or other aquatic plants 2.6mg/l	
	EC50	48	Crustacea	Crustacea 5.4mg/l	
	EC50	72	Algae or other aquatic plants	Algae or other aquatic plants 3.6mg/l	
	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72	Algae or other aquatic plants	Algae or other aquatic plants >79mg/l	
calcium sulfate	NOEC(ECx)	0.25	Fish	Fish 75mg/l	
	LC50	96	Fish	Fish >79mg/l	
	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72	Algae or other aquatic plants	Algae or other aquatic plants >79mg/l	
gypsum	NOEC(ECx)	0.25	Fish	Fish 75mg/l	
	LC50	96	Fish	Fish >79mg/l	
	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	6	Fish	4-320mg/l	4
limestone	LC50	96	Fish	>229.245mg/L	4
	EC50	72	Algae or other aquatic plants	Algae or other aquatic plants >14mg/l	
	Endpoint	Test Duration (hr)	Species	Value	Source
silica crystalline - quartz	Not Available	Not Available	Not Available	Not Available	Not Available

V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
calcium sulfate	HIGH	HIGH
gypsum	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation	
calcium sulfate	LOW (LogKOW = -2.2002)	
gypsum	LOW (LogKOW = -2.2002)	

Ingredient	Mobility
calcium sulfate	LOW (KOC = 6.124)
gypsum	LOW (KOC = 6.124)

SECTION 13 Disposal considerations

Waste treatment methods		
Product / Packaging disposal	 DO NOT allow wash water from cleaning or process equipment to enter drains. It may be necessary to collect all wash water for treatment before disposal. In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Where in doubt contact the responsible authority. 	

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

SECTION 14 Transport information

Labels Required		
Marine Pollutant	NO	
HAZCHEM	Not Applicable	

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
graded sand	Not Available
portland cement	Not Available
calcium carbonate	Not Available
calcium aluminate cement	Not Available
calcium sulfate	Not Available
gypsum	Not Available
limestone	Not Available
silica crystalline - quartz	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
graded sand	Not Available
portland cement	Not Available
calcium carbonate	Not Available
calcium aluminate cement	Not Available
calcium sulfate	Not Available
gypsum	Not Available
limestone	Not Available
silica crystalline - quartz	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard	
HSR002544	Construction Products (Subsidiary Hazard) Group Standard 2017	

graded sand is found on the following regulatory lists

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Chemical Footprint Project - Chemicals of High Concern List	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC	of Chemicals
Monographs	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC	of Chemicals - Classification Data
Monographs - Group 1: Carcinogenic to humans	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Approved Hazardous Substances with controls	New Zealand Workplace Exposure Standards (WES)
portland cement is found on the following regulatory lists	
New Zealand Inventory of Chemicals (NZIoC)	New Zealand Workplace Exposure Standards (WES)
calcium carbonate is found on the following regulatory lists	
New Zealand Approved Hazardous Substances with controls	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	New Zealand Workplace Exposure Standards (WES)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data	
calcium aluminate cement is found on the following regulatory lists	
New Zealand Inventory of Chemicals (NZIoC)	
calcium sulfate is found on the following regulatory lists	
New Zealand Inventory of Chemicals (NZIoC)	New Zealand Workplace Exposure Standards (WES)
gypsum is found on the following regulatory lists	
New Zealand Inventory of Chemicals (NZIoC)	New Zealand Workplace Exposure Standards (WES)
limestone is found on the following regulatory lists	
New Zealand Approved Hazardous Substances with controls	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	New Zealand Workplace Exposure Standards (WES)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data	
silica crystalline - quartz is found on the following regulatory lists	
Chemical Footprint Project - Chemicals of High Concern List	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC	of Chemicals
Monographs	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC	of Chemicals - Classification Data
Monographs - Group 1: Carcinogenic to humans	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Approved Hazardous Substances with controls	New Zealand Workplace Exposure Standards (WES)

Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Quantities
Not Applicable	Not Applicable

Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
Not Applicable	Not Applicable

Refer Group Standards for further information

Maximum quantities of certain hazardous substances permitted on passenger service vehicles

Subject to Regulation 13.14 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Gas (aggregate water capacity in mL)	Liquid (L)	Solid (kg)	Maximum quantity per package for each classification
6.5A or 6.5B	120	1	3	

Tracking Requirements

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (graded sand; portland cement; calcium aluminate cement; calcium sulfate; gypsum; silica crystalline - quartz)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (portland cement)
Korea - KECI	Yes
New Zealand - NZIoC	Yes

National Inventory	Status		
Philippines - PICCS	No (portland cement; calcium aluminate cement)		
USA - TSCA	/es		
Taiwan - TCSI	Yes		
Mexico - INSQ	No (calcium aluminate cement)		
Vietnam - NCI	Yes		
Russia - FBEPH	No (calcium aluminate cement)		
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)		

SECTION 16 Other information

Revision Date	31/03/2021
Initial Date	31/03/2021

SDS Version Summary

Version Issu	sue Date	Sections Updated
2.1.1.1 31/0	/03/2021	Acute Health (inhaled), Acute Health (skin), Acute Health (swallowed), Advice to Doctor, Appearance, Chronic Health, Classification, Disposal, Engineering Control, Fire Fighter (fire/explosion hazard), Fire Fighter (fire incompatibility), First Aid (skin), First Aid (swallowed), Handling Procedure, Ingredients, Personal Protection (other), Personal Protection (eye), Personal Protection (hands/feet), Physical Properties, Spills (major), Spills (minor), Storage (storage incompatibility)

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC-TWA: Permissible Concentration-Time Weighted Average PC-STEL: Permissible Concentration-Short Term Exposure Limit IARC: International Agency for Research on Cancer ACGIH: American Conference of Governmental Industrial Hygienists STEL: Short Term Exposure Limit TEEL: Temporary Emergency Exposure ${\sf Limit}_{\circ}$ IDLH: Immediately Dangerous to Life or Health Concentrations ES: Exposure Standard OSF: Odour Safety Factor NOAEL :No Observed Adverse Effect Level LOAEL: Lowest Observed Adverse Effect Level TLV: Threshold Limit Value I OD. Limit Of Detection OTV: Odour Threshold Value **BCF: BioConcentration Factors BEI: Biological Exposure Index** AIIC: Australian Inventory of Industrial Chemicals DSL: Domestic Substances List NDSL: Non-Domestic Substances List IECSC: Inventory of Existing Chemical Substance in China EINECS: European INventory of Existing Commercial chemical Substances ELINCS: European List of Notified Chemical Substances NLP: No-Longer Polymers ENCS: Existing and New Chemical Substances Inventory KECI: Korea Existing Chemicals Inventory NZIoC: New Zealand Inventory of Chemicals PICCS: Philippine Inventory of Chemicals and Chemical Substances TSCA: Toxic Substances Control Act TCSI: Taiwan Chemical Substance Inventory INSQ: Inventario Nacional de Sustancias Químicas NCI: National Chemical Inventory FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances This document is copyright.

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