

### 1. Identification of Substance & Company

#### Product

<b>Product name</b>	Class C Fly Ash
<b>Other names</b>	EverPlus™, Coal fly ash, Pulverised fuel ash
<b>HSNO approval</b>	HSR002545
<b>Approval description</b>	Construction Products (Carcinogenic) Group Standard 2020
<b>UN number</b>	NA
<b>Proper Shipping Name</b>	NA
<b>DG class</b>	NA
<b>Packaging group</b>	NA
<b>Hazchem code</b>	NA
<b>Uses</b>	Cement mineral additive, land fill, road base, filler, light-weighted filler and extender in building products.

#### Company Details

<b>Company</b>	<b>Golden Bay</b>
<b>Address</b>	Portland Road Whangarei, 0178 New Zealand
<b>Telephone</b>	09 432 2656 (7.30am – 4 pm, Mon – Fri)

**Emergency Telephone Numbers: 0800 764 766 (NZ Poisons Centre)  
0800 243 622 (0800 CHEMCALL)**

### 2. Hazard Identification

#### Approval

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO, Approval HSR002545, Construction Products (Carcinogenic) Group Standard 2020). The substance has been classified as hazardous according to the criteria in the Hazardous substances (Hazard Classification) Notice 2020.

#### Classes

#### Hazard Statements

STOT* single exposure category 3	H335 - May cause respiratory irritation.
Skin irritant category 2	H315 - Causes skin irritation.
Eye damage category 1	H318 - Causes serious eye damage.
Carcinogen category 1	H350 - May cause cancer.
STOT* repeated exposure category 1	H372 - Causes damage to organs through prolonged or repeated exposure.

\*STOT – System Target Organ Toxicity

*\* This substance only triggers Carcinogen category 1 and STOT Repeated Exposure category 1 if it is in the form of a fine respirable dust in an occupational (chronic exposure) setting.*

#### SYMBOLS

# DANGER



#### Other Classifications

NOTE: This mineral is considered irritating to skin when dry but is corrosive to skin when wet or in a slurry. It can cause severe skin burns and eye damage if left in contact with skin for a prolonged time.



### Precautionary Statements

<b>Prevention</b>	P102 - Keep out of reach of children. P103 - Read label before use. P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P260 - Do not breathe dust. P264 - Wash hands thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P273 - Avoid release to the environment. P280 - Wear protective gloves/eye protection/face protection*.
<b>Response</b>	P101 - If medical advice is needed, have product container or label at hand. P304+P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. P312 - Call a POISON CENTRE or doctor/physician if you feel unwell. P308+P313 - IF exposed or concerned: Get medical advice/ attention. P302+P352 - IF ON SKIN: Wash with plenty of soap and water. P332+P313 - If skin irritation occurs: Get medical advice/ attention. P362 - Take off contaminated clothing and wash before re-use. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 - Immediately call a POISON CENTRE or doctor/physician.
<b>Storage</b>	P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
<b>Disposal</b>	P405 - Store locked up. P501 - Dispose of contents/container in accordance with local/regional/national/international regulation.

### 3. Composition / Information on Ingredients

Component	CAS/ Identification	Conc (%)
silicon dioxide contains <5% respirable silica	7631-86-9 14808-60-7	25-45%
calcium oxide (lime)	1305-78-8	15-30%
aluminium oxide	1344-28-1	10-25%
ferric oxide	1309-37-1	1-20%
titanium dioxide	13463-67-7	1-3%
magnesium oxide	1309-48-4	1-5%
Heavy metals	Mixture	trace amounts

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely.

### 4. First Aid

#### General Information

If medical advice is needed, have product container or label at hand. You should call the National Poisons Centre if you feel that you may have been harmed, burned or irritated by this product. The number is 0800 764 766 (0800 POISON) (24 hr emergency service).

**Recommended first aid facilities** Ready access to running water is required. Accessible eyewash is required.

#### Exposure

<b>Swallowed</b>	IF SWALLOWED: Do NOT induce vomiting. Rinse mouth. Contact a doctor if you feel unwell.
<b>Eye contact</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Apply continuous irrigation with water for at least 15 minutes holding eyelids apart. Immediately call a POISON CENTER or doctor.
<b>Skin contact</b>	IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
<b>Inhaled</b>	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If patient is unconscious, place in the recovery position (on the side) for transport and contact a doctor. If experiencing respiratory symptoms: Immediately call a POISON CENTER or doctor.

#### Advice to Doctor

Treat symptomatically. See Section 11 for information on potential long term health effects from exposure to very fine crystalline silica dust.



### 5. Firefighting Measures

<b>Fire and explosion hazards:</b>	There are no specific risks for fire/explosion for this chemical. It is non-combustible.
<b>Suitable extinguishing substances:</b>	Not applicable, self extinguishing.
<b>Unsuitable extinguishing substances:</b>	Unknown.
<b>Products of combustion:</b>	Product does not burn. Dust may form irritating atmosphere. Product may decompose in a fire and produce toxic or corrosive fumes.
<b>Protective equipment:</b>	Self-contained breathing apparatus. Safety boots, non-flammable overalls, gloves, hat and eye protection.
<b>Hazchem code:</b>	NA

### 6. Accidental Release Measures

<b>Containment</b>	If greater than 1000kg (dust) is stored, secondary containment is required. Emergency plans to manage any potential spills must be in place. Prevent spillage from spreading or entering soil, waterways or drains.
<b>Emergency procedures</b>	In the event of large spillage (>100kg) of the dry or wetted mixture alert the fire brigade to location and give brief description of hazard. Wear protective equipment to prevent skin, eye and respiratory exposure. Clear area of any unprotected personnel. Contain spill. Prevent by whatever means possible any spillage from entering drains, sewers, or water courses.
<b>Clean-up method</b>	Collect product avoiding any dust formation, and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.
<b>Disposal</b>	Mop up and collect recoverable material into labelled containers for recycling or salvage. Recycle containers wherever possible. This material may be suitable for approved landfill. Dispose of only in accord with all regulations.
<b>Precautions</b>	The dust may form irritating atmosphere. Contaminated water will be strongly alkaline. Do not allow contaminated water to enter the environment. Wear protective equipment to prevent skin and eye contamination and the inhalation of dust. Work up wind or increase ventilation.

### 7. Storage & Handling

<b>Storage</b>	Avoid storage of harmful substances with food. Store out of reach of children. Containers should be kept closed in order to minimise contamination. Keep in a cool, dry place. Avoid contact with incompatible substances as listed in Section 10.
<b>Handling</b>	Keep exposure to a minimum, and minimise the quantities kept in work areas. Minimise dust generation and accumulation. See section 8 with regard to personal protective equipment requirements. Avoid skin and eye contact and inhalation of dust.

### 8. Exposure Controls / Personal Protective Equipment

#### Workplace Exposure Standards

A workplace exposure standard (WES) has not been established by WorkSafe NZ for all ingredients of this product. There is a general limit of 3mg/m<sup>3</sup> for respirable particulates and 10mg/m<sup>3</sup> for inhalable particulates when limits have not otherwise been established.

NZ Workplace Exposure Stds	Ingredient	WES-TWA	WES-STEL
	silicon dioxide	see crystalline silica	data unavailable
	aluminium oxide	10mg/m <sup>3</sup>	data unavailable
	iron oxide	5mg/m <sup>3</sup> (as Fe)	data unavailable
	calcium oxide	2mg/m <sup>3</sup>	data unavailable
	magnesium oxide	10mg/m <sup>3</sup> (fume)	data unavailable
	titanium dioxide	10mg/m <sup>3</sup>	data unavailable
	Crystalline Silica (all forms) - respirable	0.05mg/m <sup>3</sup> carcinogen cat 1	data unavailable

#### Engineering Controls

In industrial situations, it is expected that employee exposure to hazardous substances will be controlled to a level as far below the WES as practicable by applying the hierarchy of control required by the Health and Safety at Work Act (2015) and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016. Exposure can be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe air borne concentrations of mists, dusts or vapours are high, you are advised to modify processes or increase ventilation.

### Personal Protective Equipment

#### General

Personal Protective Equipment (PPE) should not be used as the primary means of exposure protection, except in the event of an accident or emergency situation or where all other means of protection have proven to be inadequate. Clean PPE after use, or dispose of as appropriate. Store PPE for re-use in a clean place. Regular training on the correct use of PPE should be provided. In particular the correct fitting and use of respirators and where applicable the cleaning of respirators should be undertaken. Work clothes should not be taken home and should be washed separately from other clothing.

#### Eyes



Protect eyes with goggles, safety glasses or full face mask. Avoid wearing contact lenses.

#### Skin



Avoid repeated or prolonged skin contact. Wear overalls, waterproof boots and impervious alkali-resistant gloves (e.g., nitrile, PVC, rubber, neoprene). Tuck overalls inside boots and seal with duct tape to reduce risk of concrete entering boots. Remove protective clothing and wash exposed areas with soap and water prior to eating, drinking or smoking. Take special care to ensure that cuts/abrasions or irritated skin are not exposed to this product. It is also important to ensure that wet concrete does not become trapped within gloves, boots or clothing – leaving concrete in contact with the skin for an extended period of time may cause skin burns.

It is important that skin is also covered when dust is created (e.g., sanding, grinding, crushing). The dust may also irritate and/or damage the skin.

#### Respiratory



To prevent irritation a well-fitted dust mask should be used (this is not recommended when exposure is close to the WES). A fine particulate half, full face respirator with an effective seal or a positive pressure respirator with a P3 filter is recommended when airborne concentrations approach the WES (section 8). If sanding, grinding, crushing or cutting concrete, it is possible that the silica dust WES ( $0.02 \text{ mg/m}^3$ ) will be exceeded; hence a respirator will be required. If exposure to the concentrated aqueous solution, dust and mist is likely, a full face respirator with a particulate filter is recommended.

### WES Additional Information

Air monitoring to measure the overall amount of silica dust created at various positions on the worksite and the maximum level of worker exposure (given the use of dust control methods, respirators and other measures) should be carried out on a regular basis or when new work methods or equipment is introduced. Air monitoring can be carried out by occupational hygienists or other trained personnel.

## 9. Physical & Chemical Properties

<b>Appearance</b>	light brown/grey fine powder
<b>Odour</b>	no specific odour
<b>Odour threshold</b>	no data
<b>pH</b>	12.3 +/- 0.1 (as 1:1 ratio of fly ash and water)
<b>Freezing / melting point</b>	1200-1400°C
<b>Boiling point</b>	no data
<b>Flash point</b>	non flammable
<b>Flammability</b>	non flammable
<b>Upper &amp; lower flammable limits</b>	no LEL or UEL
<b>Vapour pressure</b>	not volatile
<b>Vapour density</b>	not applicable
<b>Specific gravity / density</b>	bulk density: 900 to 1700kg/m <sup>3</sup>
<b>Solubility</b>	4g/100ml @ 25°C
<b>Partition Coefficient:</b>	no data
<b>Auto-ignition temperature</b>	no data
<b>Decomposition temperature</b>	no data
<b>Viscosity</b>	no data



**Particle characteristics**                      Respirable dust fraction: 50% (dust fraction <7 micron)

### 10. Stability & Reactivity

<b>Stability</b>	Stable
<b>Conditions to be avoided</b>	Containers should be kept closed in order to avoid contamination. Keep from extreme heat and open flames.
<b>Incompatible groups</b>	acids
<b>Substance Specific Incompatibility</b>	none known
<b>Hazardous decomposition products</b>	none known
<b>Hazardous reactions</b>	none known

### 11. Toxicological Information

#### Summary

IF SWALLOWED: Ingestion of this product may cause gastrointestinal irritation.

IF IN EYES: Contact with dust can cause effects ranging from irritation to serious eye damage/burns and blindness.

IF ON SKIN: Dust may cause irritation.

IF INHALED: Dust may cause respiratory irritation. Short term (acute) silicosis can occur with one-off exposures to extremely high levels of fine crystalline silica dust. Other short term effects include irritation, choking and difficulty breathing.

CHRONIC EFFECTS: The dust of this product may contain respirable crystalline silica. Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC Group 1). The carcinogenicity of silica is related to long term (e.g., 10 years) inhalation of very fine particulate. Carcinogenicity of silica appears linked to development of silicosis (see systematic below) followed by complications and, eventually lung cancer. In addition to silicosis there is some evidence that exposure to respirable crystalline silica may be linked to scleroderma and an increased risk of kidney disease.

#### Supporting Data

<b>Acute</b>	<b>Oral</b>	Using LD <sub>50</sub> 's for ingredients, the calculated LD <sub>50</sub> (oral, rat) for the mixture is >5,000 mg/kg. Data considered includes: silicon dioxide >15000mg/kg, iron oxide >10000mg/kg (rat), calcium oxide 2 000 mg/kg bw (rat) titanium dioxide >20000mg/kg (rat).
	<b>Dermal</b>	Using LD <sub>50</sub> 's for ingredients, the calculated LD <sub>50</sub> (dermal, rat) for the mixture is >5000 mg/kg. Data considered includes: silicon dioxide >5000mg/kg (rabbit), iron oxide LDLo 30mg/kg (dog), titanium dioxide >10000mg/kg (hamster).
	<b>Inhaled</b>	Using LC <sub>50</sub> 's for ingredients, the calculated LC <sub>50</sub> (inhalation, rat) for the mixture is >5mg/L. Data considered includes: calcium oxide 6.04 mg/L air (rat), titanium dioxide LC <sub>50</sub> 3.43-6.82mg/l air (4h, rat).
	<b>Eye</b>	The mixture is considered to be corrosive to the eye. Sodium oxide, potassium oxide and calcium oxide are considered to be eye corrosives.
	<b>Skin</b>	The mixture is considered to be a skin irritant, Sodium oxide, potassium oxide and calcium oxide are considered to be skin corrosives at a higher concentration.
<b>Chronic</b>	<b>Sensitisation</b>	No ingredient present at concentrations > 0.1% is considered a sensitizer.
	<b>Mutagenicity</b>	No ingredient present at concentrations > 0.1% is considered a mutagen.
	<b>Carcinogenicity</b>	This mixture does contain crystalline silica. Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC Group 1). The mixture triggers Carcinogen category 1 classification (confirmed carcinogen).
	<b>Reproductive / Developmental</b>	No data for mixture is available. No ingredient present at concentrations > 0.1% is considered a reproductive or developmental toxicant or have any effects on or via lactation.
	<b>Systemic</b>	The mixture is not considered to be a target organ toxicant, because of the presence of crystalline silica < 1%. Crystalline silica triggers STOT repeated exposure category 1 classification if it is in the form of a fine respirable dust in an occupational (chronic exposure) setting.
	<b>Aggravation of existing conditions</b>	Persons with existing lung conditions may be at a higher risk of further adverse health effects (as above). Smokers have an increased risk of lung cancer and silicosis.

### 12. Ecological Data

#### Summary

Flyash is considered to be harmful in the environment when in a soluble form. This is primarily due to the high pH of the product. Lime dissolves in water to produce a highly alkaline solution that will burn and kill fish, insects and plants.



### Supporting Data

<b>Aquatic</b>	Using EC <sub>50</sub> 's for ingredients, the estimated EC <sub>50</sub> for the mixture is > 100 mg/L.
<b>Bioaccumulation</b>	Not applicable
<b>Degradability</b>	Not applicable (predominantly natural products)
<b>Soil</b>	No data available for the mixture. The soil toxicity value for the mixture is estimated to be ≥ 100 mg/kg.
<b>Terrestrial vertebrate</b>	This product is not considered harmful to terrestrial vertebrates. No LC <sub>50</sub> (diet) data for ingredients are available and the classification is based on the LD <sub>50</sub> (oral) – see section 11 – oral toxicity.
<b>Terrestrial invertebrate</b>	The mixture is not considered harmful to terrestrial invertebrates.
<b>Biocidal</b>	Not designed as a biocide.

### 13. Disposal Considerations

<b>Restrictions</b>	There are no product-specific restrictions, however, local council and resource consent conditions may apply, including requirements of trade waste consents.
<b>Disposal method</b>	Disposal of this product must comply with the Hazardous Substances (Disposal) Notice 2017 and the requirements of the Resource Management Act for which approval should be sought from the Regional Authority. The substance must be treated and therefore rendered non-hazardous before discharge to the environment.
<b>Contaminated packaging</b>	Disposal of contaminated packaging must comply with the Hazardous Substances (Disposal) Notice 2017 clause 12. Ensure that the package is rendered incapable of containing any substance and is disposed in a manner that is consistent with the requirements of the substance it contained and the material of the package. If possible reuse or recycle packaging.

### 14. Transport Information

#### Land Transport Rule: Dangerous Goods 2005 - NZS 5433:2007

Transport according to NZS 5433 (Transport of Hazardous Substances on Land). Considered a dangerous good for transport.

<b>UN number:</b>	NA	<b>Proper shipping name:</b>	NA
<b>Class(es)</b>	NA	<b>Packing group:</b>	NA
<b>Precautions:</b>	NA	<b>Hazchem code:</b>	NA

### 15. Regulatory Information

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO). Approval code: HSR002545, Construction Products (Carcinogenic) Group Standard 2020. All ingredients appear on the New Zealand Inventory of Chemicals NZIoC.

#### Specific Controls

Key workplace requirements are:

SDS	To be available within 10 minutes in workplaces storing any <i>quantities</i> .
Inventory	An inventory of all hazardous substances must be prepared and maintained.
Packaging	All hazardous substances should be appropriately <i>packaged including substances that</i> have been decanted, transferred or manufactured for own use or have been supplied
Labelling	Must comply with <i>the Hazardous Substances (Labelling) Notice 2017</i> .
Emergency plan	Required if > 1000kg is stored.
Certified handler	Not required.
Tracking	Not required.
Bundling & secondary containment	Required if > 1000kg is stored.
Signage	Required if > 1000kg is stored.
Location compliance certificate	Not required.
Flammable zone	Not required.
Fire extinguisher	Not required.

Note: The above workplace requirements apply if only this particular substance is present. The complete set of controls for a location will depend on the classification and total quantities of other substances present in that location.

#### Other Legislation

In New Zealand, the use of this product may come under the Resource Management Act and Regulations, the Health and Safety at Work Act 2015 and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016, local Council Rules and Regional Council Plans.

### 16. Other Information

#### Abbreviations

<b>Approval Code</b>	Approval HSR002545, Construction Products (Carcinogenic) Group Standard 2020 Controls, EPA. <a href="http://www.epa.govt.nz">www.epa.govt.nz</a>
<b>CAS Number</b>	Unique Chemical Abstracts Service Registry Number
<b>EC<sub>50</sub></b>	Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species)
<b>EPA</b>	Environmental Protection Authority (New Zealand)
<b>GHS</b>	Globally Harmonised System of Classification and Labelling of Chemicals, 7 <sup>th</sup> revised edition, 2017, published by the United Nations.
<b>HAZCHEM Code</b>	Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters
<b>HSNO</b>	Hazardous Substances and New Organisms (Act and Regulations)
<b>IARC</b>	International Agency for Research on Cancer
<b>LEL</b>	Lower Explosive Limit
<b>LD<sub>50</sub></b>	Lethal Dose 50% – dose which is fatal to 50% of a test population (usually rats).
<b>LC<sub>50</sub></b>	Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population (usually rats)
<b>NZIoC</b>	New Zealand Inventory of Chemicals
<b>STEL</b>	Short Term Exposure Limit - The maximum airborne concentration of a chemical or biological agent to which a worker may be exposed in any 15 minute period, provided the TWA is not exceeded
<b>STOT RE</b>	System Target Organ Toxicity – Repeated Exposure
<b>STOT SE</b>	System Target Organ Toxicity – Single Exposure
<b>TWA</b>	Time Weighted Average – generally referred to as WES averaged over typical work day (usually 8 hours)
<b>UEL</b>	Upper Explosive Limit
<b>UN Number</b>	United Nations Number
<b>WES</b>	Workplace Exposure Standard - The airborne concentration of a biological or chemical agent to which a worker may be exposed during work hours (usually 8 hours, 5 days a week). The WES relates to exposure that has been measured by personal monitoring using procedures that gather air samples in the worker's breathing zone.

#### References

<b>Data</b>	Unless otherwise stated comes from the EPA HSNO chemical classification information database (CCID).
<b>Controls</b>	EPA notices, <a href="http://www.epa.govt.nz">www.epa.govt.nz</a> , Health and Safety at Work (Hazardous Substances) Regulations 2017, <a href="http://www.legislation.govt.nz">www.legislation.govt.nz</a>
<b>WES</b>	The latest NZ Workplace Exposure Standards, published by WorkSafe NZ and available on their web site – <a href="http://www.worksafe.govt.nz">www.worksafe.govt.nz</a> .
<b>Other References:</b>	EU ECHA, ingredients SDS's, ChemIDplus

#### Review

Date	Reason for review
January 2020	Not applicable – new SDS
March 2023	HSNO to GHS

#### Disclaimer

This SDS was prepared by Datachem LTD and is based on our current state of knowledge, including information obtained from suppliers. The SDS is given in good faith and constitutes a guideline (not a guarantee of safety). The level of risk each substance poses is relevant to its properties (as summarised in the SDS) AND HOW THE SUBSTANCE IS USED. While guidelines are given for personal protective equipment, such precautions must be relevant to the use. The likely GHS 7 classifications for this SDS have been estimated based on general information from the supplier (e.g., hazard, toxicological). This SDS is copyright Datachem and must not be copied, edited or used for other than intended purpose. To contact the SDS author, email [info@datachem.co.nz](mailto:info@datachem.co.nz) or phone: +64 21 1040951.

