

PastureSure 10K (NI) Ballance Agri-Nutrients

Chemwatch: 5374-49 Version No: 4.1

Safety Data Sheet according to the Health and Safety at Work (Hazardous Substances) Regulations 2017

Chemwatch Hazard Alert Code: 2

Issue Date: **15/09/2022** Print Date: **18/09/2022** L.GHS.NZL.EN.E

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

Product Identifier

Product name	PastureSure 10K (NI)
Chemical Name	Not Applicable
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	Fertilisers
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Details of the manufacturer or supplier of the safety data sheet

Registered company name	Ballance Agri-Nutrients
Address	161 Hewletts Rd Mount Maunganui New Zealand
Telephone	+64 800 222 090
Fax	Not Available
Website	www.ballance.co.nz
Email	customerservices-mount@ballance.co.nz

Emergency telephone number

Association / Organisation	CHEMCALL
Emergency telephone numbers	Freephone: 0800 CHEMCALL (0800 243 622) (24 Hours/ 7 Days)
Other emergency telephone numbers	Not Available

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		0 = Minimum
Body Contact	2	1	1 = Low
Reactivity	1		2 = Moderate
Chronic	0		3 = High 4 = Extreme

Classification [1]	Serious Eye Damage/Eye Irritation Category 2
Legend:	1. Classified by Chemwatch; 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	6.4A

Label elements

Issue Date: 15/09/2022 Print Date: 18/09/2022

Hazard pictogram(s)



Signal word

Hazard statement(s)

H319 Causes serious eye irritation.

Precautionary statement(s) Prevention

P280 Wear protective gloves, protective clothing, eye protection and face protection.	• • • • • • • • • • • • • • • • • • • •	
	P280	Wear protective gloves, protective clothing, eye protection and face protection.
P264 Wash all exposed external body areas thoroughly after handling.	P264	Wash all exposed external body areas thoroughly after handling.

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.
P337+P313	If eye irritation persists: Get medical advice/attention.

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Not Applicable

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
7778-18-9	10-30	calcium sulfate
7757-93-9	10-30	calcium phosphate, dibasic
7447-40-7	10-30	potassium chloride
57-13-6	10-30	шеа
7758-23-8	1-10	calcium phosphate, monobasic
57-55-6	<1	propylene glycol
Not Available	10-30	Ingredients determined not to be hazardous
Legend:	Classified by Chemwatch; 2. C. Classification drawn from C&L:	lassification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; * FU IOFI Vs available

SECTION 4 First aid measures

Description of first aid measures

Description of mist ala measur	
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 contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.
Inhalation	 If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary.
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.

SECTION 5 Firefighting measures

Chemwatch: 5374-49 Version No: 4.1

Page 3 of 12 PastureSure 10K (NI)

Issue Date: 15/09/2022 Print Date: 18/09/2022

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog Large fires only.

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.
- DO NOT approach containers suspected to be hot.
- ▶ Cool fire exposed containers with water spray from a protected location.

▶ 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.
- Lisually the initial or primary explosion takes place in a confined space such as plant or machinery, and can be of sufficient force to damage or rupture the plant. If the shock wave from the primary explosion enters the surrounding area, it will disturb any settled dust layers, forming a second dust cloud, and often initiate a much larger secondary explosion.

Fire/Explosion Hazard

Combustion products include carbon monoxide (CO) carbon dioxide (CO2) hydrogen chloride phosgene nitrogen oxides (NOx) phosphorus oxides (POx) sulfur oxides (SOx)

metal oxides other pyrolysis products typical of burning organic material.

May emit poisonous fumes May emit corrosive fumes.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills

Remove all ignition sources

Moderate hazard.

- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Use dry clean up procedures and avoid generating dus
- Place in a suitable, labelled container for waste disposal.

Major Spills

- CAUTION: Advise personnel in area.
- Alert Emergency Services and tell them location and nature of hazard.
- Control personal contact by wearing protective clothing
- Prevent, by any means available, spillage from entering drains or water courses.
- ► Recover product wherever possible.

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

SECTION 7 Handling and storage

Precautions for 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.
- DO NOT enter confined spaces until atmosphere has been checked.

Safe handling

- DO NOT allow material to contact humans, exposed food or food utensils.
- 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.
- Use continuous suction at points of dust generation to capture and minimise the accumulation of dusts. Particular attention should be given to overhead and hidden horizontal surfaces to minimise the probability of a "secondary" explosion

Issue Date: 15/09/2022 Print Date: 18/09/2022

PastureSure 10K (NI)

Other information

Version No: 4.1

- 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 Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container

- Glass container is suitable for laboratory quantities
- Polyethylene or polypropylene container
- Check all containers are clearly labelled and free from leaks.

Calcium sulfate:

- reacts violently with reducing agents, acrolein, alcohols, chlorine trifluoride, diazomethane, ethers, fluorine, hydrazine, hydrazinium perchlorate, hydrogen peroxide, finely divided aluminium or magnesium, peroxyfuroic acid, red phosphorus, sodium acetylide
- sensitises most organic azides which are unstable shock- and heat- sensitive explosives
- ► may form explosive materials with 1,3-di(5-tetrazolyl)triazene
- ▶ is incompatible with glycidol, isopropyl chlorocarbonate, nitrosyl perchlorate, sodium borohydride
- ▶ is hygroscopic; reacts with water to form gypsum and Plaster of Paris

Storage incompatibility

- forms anhydrous ammonia and nitrous vapours on contact with hot surfaces
- reacts violently with strong oxidisers, chlorine, inorganic chlorides, chlorites, chromyl chloride, dichromates, dicyanofurazan, fluorine, gallium perchlorate, hydrogen peroxide, lead dioxide, nitrates, nitrites, permanganates, perchlorates, titanium tetrachloride, triethylenetetramine
- ignites or explodes on reaction with ammonium nitrate, chromyl chloride, nitrosyl perchlorate, phosphorus pentachloride
- ray form highly explosive nitrogen trichloride on contact with hexanitroethane, perchloryl fluoride, sodium perchlorate, trichloroisocyanuric acid, hypochlorites and other chlorinating agents
- is incompatible with oxalic acid, sodium dichlorocyanurate
- Phosphates are incompatible with oxidising and reducing agents.
- Phosphates are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents such as
- Partial oxidation of phosphates by oxidizing agents may result in the release of toxic phosphorus oxides.















Must not be stored together

- May be stored together with specific preventions

May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

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)	calcium sulfate	Calcium sulphate (Gypsum, Plaster of Paris)	10 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	propylene glycol	Propane-1,2-diol, Vapour and particulates	150 ppm / 474 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	propylene glycol	Propane-1,2-diol, Particulates only	10 mg/m3	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
urea	30 mg/m3	280 mg/m3	1,700 mg/m3
propylene glycol	30 mg/m3	1.300 mg/m3	7.900 mg/m3

Ingredient	Original IDLH	Revised IDLH
calcium sulfate	Not Available	Not Available
calcium phosphate, dibasic	Not Available	Not Available
potassium chloride	Not Available	Not Available
urea	Not Available	Not Available
calcium phosphate, monobasic	Not Available	Not Available
propylene glycol	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
calcium phosphate, dibasic	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.

Version No: 4.1

PastureSure 10K (NI)

Issue Date: 15/09/2022 Print Date: 18/09/2022

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit	
urea	E	≤ 0.01 mg/m³	
calcium phosphate, monobasic	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.		

MATERIAL DATA

Exposure controls

Appropriate engineering 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. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Personal protection









- Safety glasses with side shields.
- Chemical goggles

Eye and face protection

Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available.

Skin protection

See Hand protection below

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. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly

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.
- ► fluorocaoutchouc
- ► polyvinyl chloride

Body protection

Hands/feet protection

See Other protection below

Other protection

- Overalls.
- P.V.C apron.
- Barrier cream.
- Skin cleansing cream.
- ▶ Eye wash unit.

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 computergenerated selection:

PastureSure 10K (NI)

Material	СРІ
PE/EVAL/PE	A
BUTYL	С
NATURAL RUBBER	С
PVA	С

- * 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

Type AK-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AK-AUS P2	-	AK-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AK-AUS / Class 1 P2	-
up to 100 x ES	-	AK-2 P2	AK-PAPR-2 P2 ^

^ - Full-face

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 $\label{eq:conditional} \mbox{dioxide}(SO2), \ G = \mbox{Agricultural chemicals}, \ K = \mbox{Ammonia}(\mbox{NH3}), \ \mbox{Hg} = \mbox{Mercury}, \ \mbox{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).

Chemwatch: **5374-49**Version No: **4.1**

PastureSure 10K (NI)

Issue Date: **15/09/2022**Print Date: **18/09/2022**

- \cdot 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.
- Where protection from nuisance levels of dusts are desired, use type N95 (US) or type
 P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)
- \cdot 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	Coloured particles; partly soluble in water.		
Physical state	Divided Solid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	Not Available	Decomposition temperature (°C)	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 Available	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 Available
Vapour pressure (kPa)	Not Applicable	Gas group	Not Available
Solubility in water	Partly miscible	pH as a solution (Not Available%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See 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

Information on toxicological effect

Information on toxicological ef	fects
Inhaled	The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). 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 that suitable control measures be used in an occupational setting. 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.
Ingestion	Accidental ingestion of the material may be damaging to the health of the individual.
Skin Contact	Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. Irritation and skin reactions are possible with sensitive skin Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects.

Version No: 4.1

PastureSure 10K (NI)

Issue Date: **15/09/2022** Print Date: **18/09/2022**

	l i i i i i i i i i i i i i i i i i i i	material may cause eye irritation in a substantial number of individuals and/or may ty-four hours or more after instillation into the eye(s) of experimental animals.			
Eye		ion characterised by temporary redness (similar to windburn) of the conjunctiva			
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.				
Gillonic	Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less that micron penetrating and remaining in the lung. A prime symptom is breathlessness. Lung shadows show on X-ray.				
	TOXICITY	IRRITATION			
PastureSure 10K (NI)	Not Available	Not Available			
	TOXICITY	IRRITATION			
calcium sulfate	Inhalation(Rat) LC50; >3.26 mg/l4h ^[1]	Not Available			
	Oral (Rat) LD50; >1581 mg/kg ^[1]				
	тохісіту	IRRITATION			
	Dermal (rabbit) LD50: >7940 mg/kg ^[2]	Eye (rabbit): 8 on a scale of 110			
calcium phosphate, dibasic	Inhalation(Rat) LC50; >2.6 mg/l4h ^[1]	Eye: no adverse effect observed (not irritating) ^[1]			
,,	Oral (Rat) LD50; >10000 mg/kg ^[2]	Skin (rabbit): 0 on a scale of 8			
	3	Skin: no adverse effect observed (not irritating) ^[1]			
	TOXICITY	IRRITATION			
potassium chloride	Oral (Rat) LD50; 2600 mg/kg ^[2]	Eye (rabbit): 500 mg/24h - mild			
	TOXICITY	IRRITATION			
urea	dermal (rat) LD50: 8200 mg/kgl ^[2]	Eye: no adverse effect observed (not irritating)[1]			
	Oral (Rat) LD50; 8471 mg/kg ^[2]	Skin (human): 22 mg/3 d (I)- mild			
		Skin: no adverse effect observed (not irritating) ^[1]			
	TOXICITY	IRRITATION			
calcium phosphate,	Dermal (rabbit) LD50: >7940 mg/kg ^[2]	Eye : Severe			
monobasic	Inhalation(Rat) LC50; >2.6 mg/l4h ^[1]	Eye: adverse effect observed (irreversible damage) ^[1]			
	Oral (Rat) LD50; 7100 mg/kg ^[2]	Skin: no adverse effect observed (not irritating) ^[1]			
	тохісіту	IRRITATION			
	Dermal (rabbit) LD50: 11890 mg/kg ^[2]	Eye (rabbit): 100 mg - mild			
	Inhalation(Rat) LC50; >44.9 mg/L4h ^[2]	Eye (rabbit): 500 mg/24h - mild			
propylene glycol	Oral (Rat) LD50; 20000 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]			
		Skin(human):104 mg/3d Intermit Mod			
		Skin(human):500 mg/7days mild			
		Skin: no adverse effect observed (not irritating) ^[1]			
Legend:	Nalue obtained from Europe ECHA Registered Substate specified data extracted from RTECS - Register of Toxic I	nces - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise Effect of chemical Substances			
	-				
	relate pneumoconiosis with chronic exposure to gypsum. natural dusts of calcium sulfate except in the presence of	s membrane, and respiratory system irritant. Early studies of gypsum miners did not Other studies in humans (as well as animals) showed no lung fibrosis produced by silica. However, a series of studies reported chronic nonspecific respiratory diseases			
CALCIUM SULFATE	gypsum industry workers in Gacki, Poland. Unlike other fibers, gypsum is very soluble in the body; its half-life in the lungs has been estimated as minutes. In four healthy men receivir calcium supplementation with calcium sulfate (CaSO4-1/2H2O) (200 or 220 mg) for 22 days, an average absorption of 28.3% was reported Several feeding studies in pigs on the bioavailability of calcium in calcium supplements, including gypsum, have been conducted. The bioavailability of calcium in gypsum was similar to that for calcitic limestone, oyster shell flour, marble dust, and aragonite, ranging from 85 102%.				
CALCIUM PHOSPHATE,	for calcium: Toxicity from calcium is not common because the gastrointestinal tract normally limits the amount of calcium absorbed. Therefore, short-term intake of large amounts of calcium does not generally produce any ill effects aside from constipation and an increased risk of kidney stones. However, more severe toxicity can occur when excess calcium is ingested over long periods, or when calcium is combined with increased amounts of vitamin D, which increases calcium absorption. Calcium toxicity is also sometimes found after excessive intravenous administration calcium. Toxicity is manifested by abnormal deposition of calcium in tissues and by elevated blood calcium levels (hypercalcaemia). However, hypercalcaemia is often due to other causes, such as abnormally high amounts of parathyroid hormone (PTH).				
DIBASIC	calcium. Toxicity is manifested by abnormal deposition of	calcium in tissues and by elevated blood calcium levels (hypercalcaemia). However,			

Chemwatch: 5374-49 Version No: 4.1

PastureSure 10K (NI)

Issue Date: 15/09/2022 Print Date: 18/09/2022

Altered sleep time, change in motor activity, antipsychosis, dyspnea, methaemoglobinaemia, convulsions, lymphomas recorded. Carcinogenic by RTFCS criteria

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. For urea:

UREA

There is little data that relates urea to human health other than its use in dermatology and some more limited applications in clinical medicine. The use of urea (at 10% concentration or less) in ointments and creams to treat dry skin has been widespread, and long term follow-up studies have indicated that the substance is nonallergenic and virtually free from side effects. Among other clinical therapeutic uses, the treatment of inappropriate secretion of antidiuretic hormone (SIADH) should be noted, because its chronic form has involved long term oral administration of large amounts of urea. Most patients have tolerated urea well, although diarrhoea is sometimes reported after ingestion of 60-90 g/day. The possibility exists that infection of H. pylori in human stomach may aggravate local effects by urea because of ammonia generation. Acute toxicity: The acute toxicity by urea is well delineated by the oral route.

NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.

PROPYLENE GLYCOL

The acute oral toxicity of propylene glycol is very low, and large quantities are required to cause perceptible health damage in humans. Serious toxicity generally occurs only at plasma concentrations over 1 g/L, which requires extremely high intake over a relatively short period of time. It would be nearly impossible to reach toxic levels by consuming foods or supplements, which contain at most 1 g/kg of PG. Cases of propylene glycol poisoning are usually related to either inappropriate intravenous administration or accidental ingestion of large quantities by children. The potential for long-term oral toxicity is also low. Because of its low chronic oral toxicity, propylene glycol was classified by the U. S. Food and Drug Administration as "generally recognized as safe" (GRAS) for use as a direct food additive.

Prolonged contact with propylene glycol is essentially non-irritating to the skin. Undiluted propylene glycol is minimally irritating to the eye, and can produce slight transient conjunctivitis (the eye recovers after the exposure is removed).

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

CALCIUM SULFATE & CALCIUM PHOSPHATE, DIBASIC & UREA & CALCIUM PHOSPHATE, MONOBASIC

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. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases.

Acute Toxicity	×	Carcinogenicity	X
Skin Irritation/Corrosion	×	Reproductivity	X
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	×
Respiratory or Skin sensitisation	×	STOT - Repeated Exposure	×
Mutagenicity	×	Aspiration Hazard	x

Legend:

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

Toxicity							
	Endpoint	Test Duration (hr)		Species		Value	Source
PastureSure 10K (NI)	Not Available	Not Available		Not Available		Not Available	Not Available
	Endpoint	Test Duration (hr)		Species		Value	Source
	NOEC(ECx)	0.25h		Fish		75mg/l	4
calcium sulfate	EC50	72h		Algae or other aquatic plants	other aquatic plants		2
	LC50	96h		Fish		>79mg/l	2
calcium phosphate, dibasic	Endpoint	Test Duration (hr)		Species		Value	Source
	EC50(ECx)	48h		Crustacea		>2.9mg/l	2
	EC50	72h		Algae or other aquatic plants		>4.4mg/l	2
	EC50	48h (Crustacea		>2.9mg/l	2
	LC50	96h		Fish		>13.5mg/l	2
	Endpoint	Test Duration (hr)	Sp	pecies	Valu	ıe	Source
	NOEC(ECx)	25h	Fis	Fish 9.319mg		9mg/L	4
mataasinuu ahlasida	EC50	72h	Al	Algae or other aquatic plants >100m		0mg/l	2
potassium chloride	EC50	48h	Cr	Crustacea 95.3-		3-170.7mg/l	4
	LC50	96h	Fis	Fish 432.6		.64-644.16mg/l	4
	EC50	96h	Al	gae or other aquatic plants	894.	.6mg/L	4
	Endpoint	Test Duration (hr)	:	Species	,	Value	Source
	NOEC(ECx)	48h		Algae or other aquatic plants 7mg/l		7mg/l	4
urea	EC50	48h		Crustacea		6119-7061mg/l	4
	LC50	96h		Fish 4.65-8.48mg/l		4	

PastureSure 10K (NI)

Issue Date: **15/09/2022** Print Date: **18/09/2022**

	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50(ECx)	48h Crustacea		>100mg/l	Not Available
calcium phosphate, monobasic	EC50	72h	Algae or other aquatic plants	>100mg/l	Not Available
monopasic	EC50	48h	Crustacea	>100mg/l	Not Available
	LC50	96h	Fish	>100mg/l	Not Available
	Endneint	Total Domestics (I.A.)			0
	Enaboint	lest Duration (nr)	Species	Value	Source
	NOEC(ECx)	Test Duration (hr) 336h	Species Algae or other aquatic plants	<5300mg/l	Source 1
	<u> </u>	, ,			
propylene glycol	NOEC(ECx)	336h	Algae or other aquatic plants	<5300mg/l	1
propylene glycol	NOEC(ECx)	336h 72h	Algae or other aquatic plants Algae or other aquatic plants	<5300mg/l 19300mg/l	1 2
propylene glycol	NOEC(ECx) EC50	336h 72h 48h	Algae or other aquatic plants Algae or other aquatic plants Crustacea	<5300mg/l 19300mg/l >114.4mg/L	1 2 4

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
calcium sulfate	HIGH	HIGH
potassium chloride	HIGH	HIGH
urea	LOW	LOW
propylene glycol	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
calcium sulfate	LOW (LogKOW = -2.2002)
potassium chloride	LOW (LogKOW = -0.4608)
urea	LOW (BCF = 10)
propylene glycol	LOW (BCF = 1)

Mobility in soil

Ingredient	Mobility
calcium sulfate	LOW (KOC = 6.124)
potassium chloride	LOW (KOC = 14.3)
urea	LOW (KOC = 4.191)
propylene glycol	HIGH (KOC = 1)

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. Only dispose to the environment if a tolerable exposure limit has been set for the substance.

Only deposit the hazardous substance into or onto a landfill or sewage facility or incinerator, where the hazardous substance can be handled and treated appropriately.

SECTION 14 Transport information

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

PastureSure 10K (NI)

Issue Date: **15/09/2022**Print Date: **18/09/2022**

Land transport (UN): 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
calcium sulfate	Not Available
calcium phosphate, dibasic	Not Available
potassium chloride	Not Available
urea	Not Available
calcium phosphate, monobasic	Not Available
propylene glycol	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
calcium sulfate	Not Available
calcium phosphate, dibasic	Not Available
potassium chloride	Not Available
urea	Not Available
calcium phosphate, monobasic	Not Available
propylene glycol	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
HSR002571	Fertilisers Subsidiary Hazard Group Standard 2020

Please refer to Section 8 of the SDS for any applicable tolerable exposure limit or Section 12 for environmental exposure limit.

calcium sulfate is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

calcium phosphate, dibasic is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Inventory of Chemicals (NZIoC)

potassium chloride is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Inventory of Chemicals (NZIoC)

urea is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

calcium phosphate, monobasic is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

propylene glycol is found on the following regulatory lists New Zealand Inventory of Chemicals (NZIoC)

New Zealand Inventory of Chemicals (NZIOC)

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

Version No: 4.1

PastureSure 10K (NI)

Issue Date: **15/09/2022**Print Date: **18/09/2022**

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
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Tracking Requirements

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (calcium sulfate; calcium phosphate, dibasic; potassium chloride; urea; calcium phosphate, monobasic; propylene glycol)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

SECTION 16 Other information

Revision Date	15/09/2022
Initial Date	23/10/2019

SDS Version Summary

Version	Date of Update	Sections Updated		
3.1	24/10/2019	Ingredients		
4.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification		

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

 ${\sf PC-TWA: Permissible \ Concentration-Time \ Weighted \ Average}$

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 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

LOD: 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

Chemwatch: 5374-49 Page 12 of 12 Version No: 4.1

PastureSure 10K (NI)

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

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