SAFETY DATA SHEET

According to
HSNO Hazardous Substances (Safety Data Sheets) Notice 2017

Section 1. Identification of the material and the supplier

Product:	**Hatuma Dicalcic Phosphate**
Product Use:	Fertiliser
Restriction of Use:	Refer to Section 15
New Zealand Supplier:	**Hatuma Lime Company Ltd**
Address:	520 Maharakeke Road RD1, Waipukurau, 4281
Telephone:	+64 6 858-8567
Fax Number:	+64 6 858-8018
Emergency Telephone:	**0800 764 766 (National Poison Centre)**
Date of SDS Preparation:	4 December 2019

Section 2. Hazards Identification

This substance is hazardous according to the EPA Hazardous Substances (Classification) Notice 2017

EPA Approval No: Fertilisers (subsidiary) – HSR002571

Pictograms

Irritant Corrosive

Signal Word: **DANGER**

HSNO Classification	Hazard Code	Hazard Statement	GHS Category
6.1E (Resp)	H335	May cause respiratory irritation.	STOT SE 3
6.3A	H315	Causes skin irritation.	Skin Irrit. 2
8.3A	H318	Causes serious eye damage.	Eye Corr. 1

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read label before use.
P261	Avoid breathing dust and fumes.
P264	Wash hands thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective clothing.

Response Code	Response Statement
P101	If medical advice is needed, have product container or label at hand.
P310	Immediately call a POISON CENTER or doctor/physician.

P362	Take off contaminated clothing and wash before re-use.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.

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

Disposal Code	**Disposal Statement**
P501	Dispose of according to Local Regulations or Authorities

Section 3. Composition / Information on Hazardous Ingredients

Ingredients	Wt%	CAS NUMBER.
Calcium Carbonate	35	471-34-1
Calcium Sulfate	25	10101-41-4
Calcium Phosphate, Dibasic	20	7757-93-9
Calcium Fluoride	2	7789-75-5
Water	10	7732-18-5

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes — Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

If on Skin — Wash with plenty of soap and water. Take off contaminated clothing and wash before re-use. If skin irritation occurs: get medical advice/attention.

If Swallowed — DO NOT induce vomiting. Rinse mouth. Never give anything to the mouth of an unconscious person. If vomiting occurs, place victim face downwards, with the head turned to the side and lower than the hips to prevent vomit entering the lungs. Seek medical attention if needed.

If Inhaled — Remove person to fresh air. Remove contaminated clothing and loosen remaining clothing. Allow person to assume most comfortable position and keep warm. Keep at rest until fully recovered. Get medical advice if breathing becomes difficult.

Most important symptoms and effects, both acute and delayed

Symptoms:

Ingestion: Not applicable.
Inhalation: May cause respiratory irritation. Refer to Section 11
Skin: Causes skin irritation. Refer to Section 11
Eye: Causes serious eye damage.

Section 5. Fire Fighting Measures

Hazard Type	Non-Flammable /Non-combustible
Hazards from combustion products	Decomposition may produce toxic fumes of:, phosphorus oxides (POx), sulfur oxides (SOx), metal oxidesMay emit poisonous fumes.May emit corrosive fumes.

Suitable Extinguishing media	Use extinguishing media appropriate for surrounding fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire-fighting procedures suitable for surrounding area.
Precautions for firefighters and special protective clothing	Wear breathing apparatus plus protective gloves in the event of a fire.
HAZCHEM CODE	**None allocated**

Section 6. Accidental Release Measures

Wear protective equipment as detailed in Section 8. Clear area of any unprotected personnel. Remove all ignition sources. Avoid contact with skin and eyes.

Clean up all spills immediately.

Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers or drums for disposal. Dispose according to Local Regulations.

Section 7. Handling and Storage

Precautions for Handling:

- Read label before use.
- Avoid breathing dust and fumes.
- Wash hands thoroughly after handling.
- Avoid skin and eye contact and breathing in dust.
- Use only outdoors or in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- Wear protective clothing.

Precautions for Storage:

- Store away from incompatible materials listed in Section 10 and foodstuff containers.
- Store locked up and away from children.
- Store in a dry, cool, well-ventilated place.
- Store only in original container.
- Suitable container: Polyethylene or polypropylene container.
  Check all containers are clearly labelled and free from leaks.

Storage incompatibility:

Calcium carbonate:

- is incompatible with acids, ammonium salts, fluorine, germanium, lead diacetate, magnesium, mercurous chloride, silicon, silver nitrate, titanium. Contact with acid generates carbon dioxide gas, which may pressurise and then rupture closed containers

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
- 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 hydrides.
- Partial oxidation of phosphates by oxidizing agents may result in the release of toxic phosphorus oxides.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	TWA ppm	TWA mg/m^3	STEL ppm	STEL mg/m^3
calcium carbonate	-	10	-	-
calcium sulfate	-	10	-	-
calcium fluoride	-	2.5	-	-

Workplace Exposure Standard – Time Weighted Average (WES-TWA*). The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure.* Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). *The 15-minute average exposure standard.* Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply.

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TE
calcium carbonate	Limestone; (Calcium carbonate; Dolomite)	27 mg/m3	27 mg/m3	1300 mg/m3
calcium carbonate	Carbonic acid, calcium salt	45 mg/m3	210 mg/m3	1300 mg/m3
calcium sulfate	Calcium(II) sulfate dihydrate (1:1:2)	10 mg/m3	10 mg/m3	21 mg/m3
calcium sulfate	Calcium sulfate anhydrous; (Drierite; Gypsum; Plaster of Paris)	30 mg/m3	330 mg/m3	2000 mg/m3
calcium fluoride	Calcium fluoride	15 mg/m3	32 mg/m3	1000 mg/m3

Ingredient	Original IDLH	Revised IDLH
calcium carbonate	Not Available	Not Available
calcium sulfate	Not Available	Not Available
calcium phosphate, dibasic	Not Available	Not Available
calcium fluoride	500 mg/m3	250 mg/m3
water	Not Available	Not Available

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.

Personal Protection Equipment

Eyes	Safety glasses with side shields. Chemical goggles. 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.
Skin	Wear Butyl, Neoprene or viton gloves. Wear overalls, PVC apron and barrier cream.
Respiratory	Type AX-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
General	Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

Section 9 Physical and Chemical Properties

Appearance	Granules of variable size; dispersible in water forming a suspension. Divided solid
Colour	Grey-beige
Odour	Not available
Odour Threshold	Not available
pH	Not available
Boiling Point	Not available
Melting Point	Not available
Freezing Point	Not available
Flash Point	Not available
Flammability	Not available
Upper and Lower Explosive Limits	Not available
Vapour Pressure	Not available
Vapour Density	Not available
Relative Density	Not available
Water Solubility	Partly Miscible
Partition Coefficient:	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Kinematic Viscosity	Not available
Particle Characteristics	Not available

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions.
Conditions to Avoid	Refer to Section 7
Incompatible Materials	Refer to Section 7
Hazardous Decomposition Products	Decomposition may produce toxic fumes of: phosphorus oxides (POx), sulfur oxides (SOx), metal oxidesMay emit poisonous fumes.May emit corrosive fumes.

Section 11 Toxicological Information

Acute Effects:

Swallowed	Not triggered however, accidental ingestion of the material may be damaging to the health of the individual. As absorption of phosphates from the bowel is poor, poisoning this way is less likely. Effects can include vomiting, tiredness, fever, diarrhoea, low blood pressure, slow pulse, cyanosis, spasms of the wrist, coma and severe body spasms.
Dermal	Not applicable.
Inhalation	This material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Levels above 10 ug/m3 of suspended inorganic sulfates in the air may cause an excess risk of asthmatic attacks in susceptible persons 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
Eye	Causes serious eye damage.
Skin	Causes skin irritation. 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. Four students received severe hand burns whilst making moulds of their hands with dental plaster substituted for Plaster of Paris. The dental plaster known as "Stone" was a special form of calcium sulfate hemihydrate containing alpha-hemihydrate crystals that provide high compression strength to the moulds.

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Not applicable.
Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	Not applicable.
Chronic:	Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There is some evidence that inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.

Information on individual components:

CALCIUM CARBONATE	No evidence of carcinogenic properties. No evidence of mutagenic or teratogenic effects.
CALCIUM CARBONATE & CALCIUM SULFATE & CALCIUM PHOSPHATE, DIBASIC & CALCIUM FLUORIDE	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.

Section 12. Ecotoxicological Information

This product is not hazardous to the environment.

Persistence and degradability	No data available for the product calcium sulfate: Water/Soil = High Air: High Water: Water/Soil = Low Air: Low
Bioaccumulation	No data available for the product Calcium sulfate: LOW (LogKOW = -2.2002) Water: LOW (LogKOW = -1.38)

Mobility in Soil	No data available for the product Calcium sulfate: LOW (KOC = 6.124) Water: LOW (KOC = 14.3)
Other adverse effects	No data available

Section 13. Disposal Considerations

Disposal Method: Triple Rinse container and dispose of according to local regulations.

Precautions and methods to avoid: None known.

Section 14 Transport Information

This product is NOT classified as a Dangerous Good for transport in NZ ; NZS 5433:2012

Section 15 Regulatory Information

EPA Approval Code: Fertilisers (subsidiary)– HSR002571

HSNO Classification: 6.1E(Resp), 6.3A, 8.3A

HSNO Controls:
Trigger quantities for this substance:

	Trigger Quantity
Certified Handlers	Not required
Location Certificate	Not required
Tracking Trigger Quantities	Not required
Signage Trigger Quantities	1000 kg (8.3A)
Emergency Response Plan	10 000kg (8.3A)
Secondary Containment	10 000kg (8.3A)
Restriction of Use	Only use for the intended purpose.

Section 16 Other Information

Glossary

EC_{50}	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
LC_{50}	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD_{50}	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
OSHA	American Occupational Safety and Health Administration.
TEL	Tolerable Exposure Limit.
TLV	Threshold Limit Value-an exposure limit set by responsible authority.
UEL	Upper Explosive Level
WES	Workplace Exposure Limit

References:

1. EPA Hazardous Substances (Safety Data Sheets) Notice 2017
2. Workplace Exposure Standards and Biological Exposure Indices Nov 2017 edition.
3. Assigning a hazardous substance to a HSNO Approval (Aug 2013).
4. Transport of Dangerous goods on land NZS 5433:2012
5. HSW (Hazardous Substances) Regulations 2017

Disclaimer

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Please contact the New Zealand distributor, Hatuma, if further information is required.

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