SAFETY DATA SHEET

DICALCIUM PHOSPHATE DIHYDRATE

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CAS NUMBER: 7789-77-7
PROPER SHIPPING NAME: Not regulated
UN NUMBER: Not regulated

PRODUCT USE: Used as animal feed supplement, food supplement, in dentifrice, medicine, glass, fertiliser, stabiliser for plastics, dough conditioner, yeast food.

SUPPLIER: Interchem Agencies Limited
7 Gladstone Road
Northcote
AUCKLAND 0627
NEW ZEALAND
Telephone: +64 9 418 0097
Email: compliance@interchem.co.nz
24 Hour Emergency Contact: 0800 243 622
International Emergency Number: +64 4 917 9888

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

Non-Hazardous Substance according to the criteria of the European Union Regulation (EC) No. 1272/2008 and GHS 7th Edition.

EMERGENCY OVERVIEW
Non-hazardous.
Health injuries are not known or expected under normal use.
Adverse ecological effects are not known or expected.

PRECAUTIONARY STATEMENTS
Avoid generating excessive dust.
Do not breathe dust.
If in contact with eyes, rinse thoroughly.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%	HAZARDOUS
Calcium phosphate, dihydrate	7789-77-7	>98	No

SYNONYMS: Calcium monohydrogen phosphate dihydrate; DCPD; Dicalcium orthophosphate dihydrate; Calcium phosphate, dibasic, dihydrate; Calcium hydrogen phosphate dihydrate; Phosphoric acid, calcium salt (1:1), dihydrate

Section 4 - FIRST AID MEASURES

SWALLOWED
Rinse mouth out with plenty of water. If unwell, see medical advice.

EYE
Flush eyes immediately with flowing water or eye wash bottle.
If irritation continues, seek medical attention.
Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN
Brush off dust. Wash skin/hair with soap and water.
Seek medical attention in the event of irritation.

INHALED
Remove to fresh air. Encourage patient to blow nose to ensure clear passage of breathing.
Other measures are usually unnecessary. If symptoms persist, call a doctor.

NOTES TO PHYSICIAN
Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
In case of fire, use appropriate extinguishing media most suitable for surrounding fire conditions: water spray, dry powder, foam, carbon dioxide (CO_2).

FIRE FIGHTING
Alert Fire Brigade and tell them location and nature of hazard.
Use standard procedure for chemical fires.
Clear fire area of all non-emergency personnel.
Stay upwind. Eliminate ignition sources.
Use water delivered as a fine spray to control fire and cool adjacent area.
DO NOT approach containers suspected to be hot.
Cool fire exposed containers with water spray from a protected location.
If safe to do so, remove containers from path of fire.
Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD
Non-combustible.
Not considered a significant fire risk, however containers may burn.

HAZARDS FROM COMBUSTION PRODUCTS
None known.

PERSONAL PROTECTIVE EQUIPMENT
Firefighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves).

Section 6 - ACCIDENTAL RELEASE MEASURES

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

SPILL RESPONSE
Avoid generating dust. Increase ventilation. Move upwind.
Evacuate all unnecessary personnel. Eliminate all sources of ignition.

Personnel involved in the clean-up should wear full protective clothing.
Stop leak if safe to do so.
Sweep up or vacuum up (consider explosion-proof machines designed to be grounded during use).
Collect in a labelled chemical waste container and seal for disposal. See section 13 of the SDS.
Do NOT let product reach drains or waterways. In large quantities may be damaging to plants. If a significant amount does enter a waterway advise your local waste authority.
Wash spill area with plenty of water after removal of contaminant.

PROTECTIVE ACTION CRITERIA (PAC) - Revision 29

Chemical (CAS Number)	PAC-1	PAC-2	PAC-3	Units
7789-77-7	12	130	790	mg/m^3

PAC-1: Mild, transient health effects.
PAC-2: Irreversible or other serious health effects that could impair the ability to take protective action.
PAC-3: Life-threatening health effects.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
Operators should be trained in procedures for safe use of this material.
Avoid generating and breathing dust.
Avoid contact with eyes.
When handling, do not eat, drink or smoke.
Keep containers securely sealed when not in use.
Wash hands with soap and water after handling.
Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

SUITABLE PACKAGING
Original packaging.
Multi ply paper bag with sealed plastic liner or heavy gauge plastic bag.

STORAGE INCOMPATIBILITY
Segregate from acids.

STORAGE REQUIREMENTS
Keep packaging securely sealed.
Store in a cool, dry, well-ventilated area out of direct sunlight.
Store away from incompatible materials and foodstuff containers.
Protect containers against physical damage and check regularly for leaks.
Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	Measurement	Limit
New Zealand WES 2020	total dust	time weighted average (TWA)	10 mg/m^3
New Zealand WES 2020	respirable dust	time weighted average (TWA)	3 mg/m^3

No exposure limits set for calcium phosphate, dihydrate by WorkSafe New Zealand or Safe Work Australia.

ENGINEERING CONTROLS

VENTILATION SYSTEM
A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Refer to 'A simple guide to local exhaust ventilation' found on the WorkSafe New Zealand website.

PERSONAL PROTECTION EQUIPMENT (PPE)

PERSONAL RESPIRATORS
An approved dust mask e.g. a *P1* respirator, is recommended when using this product in dusty conditions. For more information see Australian/New Zealand Standard, AS/NZS 1715:2009 and AS/NZS 1716:2012. If in doubt, seek expert occupational hygiene advice.

SKIN PROTECTION
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Refer to AS/NZS 2161.1:2016 Occupational Protective Gloves – Selection, use and maintenance; AS/NZS 2210.1:2010 for Safety footwear; AS/NZS 4501.1:2008 Occupational protective clothing – Guidelines on the selection, use, care and maintenance of protective clothing.

EYE PROTECTION
Use chemical safety glasses or goggles as required to protect eyes from dust exposure. Refer to Personal eye protection Part 1: Eye and face protectors for occupational applications, Australian/New Zealand Standard: AS/NZS 1337.1:2010. Maintain eye wash fountain in work area.

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
White, tasteless, granular or powdered solid.

PHYSICAL PROPERTIES
Sparingly soluble in water; readily soluble in dilute hydrochloric acid and nitric acid, insoluble in alcohol. Sinks in water.

PROPERTY	VALUE
State:	Divided Solid
Odour:	Odourless
Molecular Weight:	172.09
Melting Range (˚C):	109˚C (Loss H_20)
Boiling Range (˚C):	Not applicable
Solubility in water (g/100ml):	0.032
pH (20% slurry):	7.4
Volatile Component (%vol):	Not available
Relative Vapor Density(air=1):	Not applicable
Lower Explosive Limit (%):	Not applicable
Autoignition Temp (˚C):	Not applicable
Specific Gravity (water=1):	2.31
Evaporation Rate:	Not applicable
Flash Point (˚C):	Not applicable
Upper Explosive Limit (%):	Not applicable
Decomposition Temp (˚C):	190
Viscosity:	Not available

Section 10 – CHEMICAL STABILITY AND REACTIVITY

CHEMICAL STABILITY
Product is stable under normal conditions of use, storage and temperature.

CONDITIONS TO AVOID
Avoid temperature extremes, direct sunlight and moisture.
Keep containers dry and tightly closed to avoid moisture absorption and contamination.

INCOMPATIBLE MATERIALS
Incompatible with acids.

HAZARDOUS DECOMPOSITION PRODUCTS
Hydroxyapatite.

HAZARDOUS REACTIONS
Hazardous polymerization will not occur.

Section 11 – TOXICOLOGICAL INFORMATION

ACUTE HEALTH EFFECTS

SWALLOWED
May be harmful if swallowed in large quantities. 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.

EYE
May cause mechanical irritation. The material may be mildly discomforting and abrasive to the eyes.

SKIN
May cause irritation and dryness of skin through prolonged exposure.

INHALED
The dust is moderately discomforting to the upper respiratory tract.

CHRONIC HEALTH EFFECTS
Sodium phosphate dibasic can cause stones in the kidney, loss of mineral from the bones and loss of thyroid gland function.

TOXICITY AND IRRITATION DATA

TOXICITY
Acute Oral Toxicity, (rat) LD_{50}: >3986 mg/kg.
Acute Dermal Toxicity, (rabbit) LD_{50}: >7940 mg/kg.
Acute Inhalation Toxicity: No data available.

IRRITATION
Eye: Not classified.
Skin: Not classified.

Carcinogenic effects: Not classified or listed by IARC, NIOSH, CaProp65 or NTP.
Mutagenic effects: Not available.
Reproductive or developmental effects: Not available.
Aspiration hazard: Not available.
Specific target organ toxicity: Not available.
Sensitisation (respiratory/contact): Not available.

Section 12 – ECOLOGICAL INFORMATION

ECOTOXICITY
No classification for ecotoxicity based on the available information.

ECOTOXICITY DATA
Fish: No data available.
Crustacean, (*Daphnia magna*), 96h EC_{50}: >1000 mg/L

Algae: No data available.

Chronic: No data available.
Persistence and Degradability: No data available.
Mobility: Insoluble in water.
Bioaccumulation: No information available.
BOD and COD: No information available.
Products of Biodegradation: Standard tests of biodegradation are not applicable to inorganic compounds.

DO NOT discharge into sewer or waterways.

The addition of large quantities of phosphates to waterways accelerates algae and plant growth in natural waters resulting in reduction in the water quality and depleting the water body of oxygen.

Section 13 – DISPOSAL CONSIDERATIONS

Disposal of Hazardous Substances is subject to the Resource Management Act and Council By-Laws in addition to HSNO requirements. Do not dispose with household rubbish.

PRODUCT
Recycle wherever possible. Special hazard may exist - specialist advice may be required.
The product may be treated so that it is no longer hazardous by a means other than dilution. This includes incineration at an approved site or burial in a landfill in such a manner that it will not lead to any adverse health effects to any person or exceed any TEL (tolerable exposure limit) set by the Authority for this substance.
Treatment in a biological wastewater treatment system with prior approval and arrangement is also permissible providing that the substance is rendered non-hazardous and does not pose any adverse effects to human health or the environment. Alternatively consult an approved Waste Management company for disposal options.

PACKAGING
Recycle wherever possible. Special hazard may exist - specialist advice may be required.
Packaging should be rendered incapable of containing any material.
Puncture containers to prevent re-use and bury at an authorised landfill.
Empty containers may be decontaminated. The residual contents of the package must be diluted to below the thresholds for the respective hazard and the diluted residue is 1% or less of the volume of the package.
Alternatively, consult an approved Waste Management company for disposal options or dispose of at an approved waste disposal facility.
Observe all label safeguards until containers are cleaned and destroyed.
Where possible retain label warnings and SDS and observe all notices pertaining to the product.

Section 14 – TRANSPORT INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG.
Not classified as a Dangerous Good under NZS 5433:2012 Transport of Dangerous Goods on Land.

Section 15 – REGULATORY INFORMATION

REGULATIONS
This product is labelled as per clause 31 of the Hazardous Substances (Labelling) Notice 2017, and the safety data sheet prepared in accordance with clause 9 of the Hazardous Substances (Safety Data Sheets) Notice 2017, alternate compliance provisions.
Classified as hazardous according to the criteria of the New Zealand Hazardous Substances and New Organisms Act.

EPA Approval number: HSR002578
HSNO Classification: 6.1E

Dicalcium phosphate dihydrate (CAS 7789-77-7) is found on the following inventory lists:
NZIoC, TSCA, DSL, EINECS, AIIC

Section 16 – OTHER INFORMATION

NEW ZEALAND POISON CENTRE 0800 POISON (0800 764 766)
NZ EMERGENCY SERVICES: 111

Interpretation and Abbreviations
ACGIH – American Conference of Governmental Industrial Hygienists.
ACVM – Agricultural Chemicals and Veterinary Medicines.
AIIC – Australian Inventory of Industrial Chemicals.
BOD – Biochemical Oxygen Demand.
COD – Chemical Oxygen Demand.
DSL – Canadian Domestic Substances List.
EINECS – European Inventory of Existing Commercial Chemical Substances.
ENCS – Japanese Existing and New Chemical substances.
GHS – Globally Harmonized System of Classification and Labelling of Chemicals.
IDLH – Immediately Dangerous to Life or Health Concentrations.
IARC – International Agency for Research on Cancer.
ISHL – Japanese Industrial Safety and Health Law List of Chemicals.
Koc – soil organic carbon-water partition coefficient
Kow - octanol/water partition coefficient
LOEL – Lowest Observed Effect Level.
LD_{LO} – Lethal Dose Low (the lowest dosage per unit of bodyweight of a substance known to have resulted in fatality in a particular animal species).
NOAA – National Oceanic and Atmospheric Administration.
NOEC – No Observed Effect Concentration.
NZ EPA CCID – New Zealand Environmental Protection Authority Chemical Classification and Information Database.
NZIoC – New Zealand Inventory of Chemicals.
OECD HPV – The Organisation for Economic Co-operation and Development High Production Volume Chemicals.
PPE – Personal Protective Equipment.
Prop 65 – California Proposition 65 List of Chemicals.
RTECS – Registry of Toxic Effects of Chemical substances.
SCAPA – Subcommittee on Consequence Assessment and Protective Actions.
STEL – Short term exposure limit.
TSCA – US Toxic Substances Control Act Existing Chemicals.
TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

Sources of key data used to compile the datasheet:
Manufacturer's SDS

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DISCLAIMER: *The information contained in this safety data sheet was obtained from current and reliable sources. This data is supplied without warranty, expressed or implied, regarding its correctness and accuracy. It is the user's responsibility to determine safe conditions for use of this product and to assume liability for loss, injury, damage or expense resulting from improper use of this product.*

End of SDS