



SAFETY DATA SHEET MONODICALCIUM PHOSPHATE REVISION 5, DATE 07 JUN 23

1. IDENTIFICATION

Product Name	Monodicalcium Phosphate
Other Names	MDCP
Uses	Used as a phosphorus and calcium source in animal feeds.
Chemical Family	No Data Available
Chemical Formula	Unspecified
Chemical Name	Monodicalcium phosphate
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)

Not Scheduled



Globally Harmonised System

Hazard Classification Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard Categories Skin Corrosion/Irritation - Category 2
 Serious Eye Damage/Irritation - Category 2A
 Specific Target Organ Toxicity (Single Exposure) - Category 3
 Long-term Hazard To The Aquatic Environment - Category 4

Pictograms

Signal Word Warning

Hazard Statements

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H413	May cause long lasting harmful effects to aquatic life.

Precautionary Statements	Prevention	P280	Wear protective gloves/eye protection/face protection.
		P261	Avoid breathing dust.
		P271	Use only outdoors or in a well-ventilated area.
		P273	Avoid release to the environment.
	Response	P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
		P337 + P313	If eye irritation persists: Get medical advice.
		P312	Call a POISON CENTER or doctor if you feel unwell.
		P332 + P313	If skin irritation occurs: Get medical advice.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P304 + P340	IF INHALED: Remove victim to fresh air and keep comfortable for breathing.
		P362 + P364	Take off contaminated clothing and wash it before reuse.
	Storage	P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
		P405	Store locked up.
	Disposal	P501	Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification Hazardous according to the criteria of Safe Work Australia under Model WHS Regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Dicalcium phosphate	Ca.H3O4P.2H2O	7757-93-9; 7789-77-7	<=100 %
Monocalcium phosphate	Ca.2H3O4P	7758-23-8	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Get medical advice/attention. 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. Never give anything by mouth to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention. *Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Encourage patient to blow nose to ensure clear passage of breathing. Call a Poison Centre or doctor/physician for advice. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
Advice to Doctor	Treat symptomatically. *Most important symptoms and effects, both acute and delayed: Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.
Medical Conditions Aggravated by Exposure	No information available.

5. FIRE FIGHTING MEASURES

General Measures	Alert Fire Brigade and tell them location and nature of hazard. If safe to do so, move undamaged containers from fire area. Do not approach containers suspected to be hot. Cool containers with water spray until well after fire is out. Equipment should be thoroughly decontaminated after use.
Flammability Conditions	Non-combustible; Material itself does not burn.
Extinguishing Media	There is no restriction on the type of extinguisher which may be used. Use extinguishing media suitable for surrounding area.
Fire and Explosion Hazard	Not considered a significant fire risk, however containers may burn. Decomposition may produce toxic fumes.
Hazardous Products of Combustion	Fire or heat may produce irritating, toxic and/or corrosive fumes, including Phosphorus oxides (POx).
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may cause pollution.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. Do not touch or walk through spilled material. Clean up all spills immediately. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Recover product, wherever possible. Place spilled material in clean, dry, sealable, labelled container. Use dry clean up procedures and avoid generating dust; sweep/shovel or vacuum up (consider explosion-proof machines designed to be grounded during storage and use). If required, wet with water to prevent dusting. Do NOT use air hoses for cleaning. Put residues in labelled plastic bags or other containers for disposal (see SECTION 13).
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.
Decontamination	Wash area down with large quantity of water and prevent runoff into drains.
Environmental Precautionary Measures	Prevent spillage from entering drains, sewers or water courses. If contamination of drains or waterways occurs, advise emergency services.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Use personal protective equipment as required (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation - Use only outdoors or in a well-ventilated area. Handle in accordance with good industrial hygiene and safety practice. Minimise dust generation and accumulation. Limit all unnecessary personal contact. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Avoid contact with incompatible materials.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed when not in use. Avoid physical damage to containers. Keep away from heat and sources of ignition - No smoking. Keep away from foodstuffs and incompatible materials (see SECTION 10). Store locked up.
Container	Keep in Polyethylene or polypropylene container. Check all containers are clearly labelled and free from leaks.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product. For dusts from solid substances without specific occupational exposure standards: - Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m ³ (measured as inhalable dust). - New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m ³ ; TWA = 3 mg/m ³ (respirable dust).
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	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.
Personal Protection Equipment	- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Dust mask/particulate filter respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses with side shields or goggles, in a dusty environment. - Hand protection: Handle with gloves. Recommended: Impervious gloves. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Normal work clothing.
Special Hazards Precautions	Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

Work Hygienic Practices

Do not eat, drink or smoke when using this product. Always wash hands with soap and water after handling. Take off contaminated clothing and wash it before reuse. Work clothes should be laundered separately.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Crystalline solid or dry powder
Odour	Odourless
Colour	White to off-white/grey
pH	3.5 - 4.5 (1% sol'n)
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	No Data Available
Freezing Point	No Data Available
Solubility	Partly soluble in water
Specific Gravity	2.3 (Water = 1)
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	No information available.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Non-combustible; Not considered a significant fire risk, however containers may burn.
Reactions That Release Gases or Vapours	Partial oxidation of phosphates by oxidising agents may result in the release of toxic phosphorus oxides.

Release of Invisible Flammable Vapours and Gases

Phosphates are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents, such as hydrides.

10. STABILITY AND REACTIVITY

General Information	No information available.
Chemical Stability	Product is considered stable.
Conditions to Avoid	Avoid generating dust. Avoid contact with incompatible materials.
Materials to Avoid	Incompatible/reactive with strong acids, oxidising and reducing agents.
Hazardous Decomposition Products	Partial oxidation of phosphates by oxidising agents may result in the release of toxic phosphorus oxides. Phosphates are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents, such as hydrides.
Hazardous Polymerisation	Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	<p>Information on toxicological effects:</p> <ul style="list-style-type: none"> - Acute toxicity: Not classified. - Skin corrosion/irritation: Causes skin irritation. - Eye damage/irritation: Causes serious eye irritation. - Respiratory/skin sensitisation: No information available. - Germ cell mutagenicity: No information available. - Carcinogenicity: No information available. - Reproductive toxicity: No information available. - STOT (single exposure): May cause respiratory irritation. - STOT (repeated exposure): No information available. - Aspiration toxicity: No information available. <p>Information on likely routes of exposure:</p> <ul style="list-style-type: none"> - Ingestion: Accidental ingestion of the material may be damaging to the health of the individual. Effects can include vomiting, tiredness, fever, diarrhoea, low blood pressure, slow pulse, cyanosis, spasms of the wrist, coma and severe body spasms. - Eye contact: Causes serious eye irritation. - Skin contact: Causes skin irritation. - Inhalation: Irritating to respiratory system. <p>Chronic effects: Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.</p>
Acute	
Ingestion	<p>Acute toxicity (Oral):</p> <p>COMPONENT: Calcium phosphate, monobasic (CAS No. 7758-23-8):</p> <ul style="list-style-type: none"> - LD50, Rat: >2,000 mg/kg <p>COMPONENT: Calcium hydrogen orthophosphate dihydrate (CAS No. 7789-77-7):</p> <ul style="list-style-type: none"> - LD50, Rat: >4,649 mg/kg
Other	<p>Acute toxicity (Dermal):</p> <p>COMPONENT: Calcium phosphate, monobasic (CAS No. 7758-23-8):</p> <ul style="list-style-type: none"> - LD50, Rabbit: >2,000 mg/kg
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	May cause long-term adverse effects in the aquatic environment.
Persistence/Degradability	No information available.
Mobility	No information available.
Environmental Fate	May cause long lasting harmful effects to aquatic life - Avoid release to the environment.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Recycle, wherever possible, or dispose of contents/container in accordance with local/regional/national regulations.
Special Precautions for Land Fill	Bury residue in an authorised landfill. Recycle containers if possible, or dispose of in an authorised landfill.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	Monocalcium phosphate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	Monocalcium phosphate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	Monocalcium phosphate
Class	No Data Available

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Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)

US DOT

Proper Shipping Name	Monocalcium phosphate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport

IMDG Code

Proper Shipping Name	Monocalcium phosphate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport

IATA DGR

Proper Shipping Name	Monocalcium phosphate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	Not Scheduled

Environmental Protection Authority (New Zealand)
Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	HSR002521 - Animal Nutritional and Animal Care Products Group Standard 2020
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National/Regional Inventories

Australia (AIIIC)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	Not Determined
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Not Determined

16. OTHER INFORMATION

Related Product Codes	MODICA0120, MODICA0190, MODICA0191, MODICA0202, MODICA0203, MODICA0204, MODICA0205, MODICA0206, MODICA0207, MODICA0208, MODICA0300, MODICA0420, MODICA0421, MODICA1000, MODICA1001, MODICA1002, MODICA1003, MODICA1004, MODICA1005, MODICA1006, MODICA1007, MODICA1011, MODICA1012, MODICA1041, MODICA1051, MODICA1064, MODICA1066, MODICA1150, MODICA1160, MODICA1170, MODICA1200, MODICA1211, MODICA1214, MODICA1215, MODICA1217, MODICA1218, MODICA1300, MODICA1301, MODICA1302, MODICA1303,
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MODICA1304, MODICA1305, MODICA1306, MODICA1400, MODICA1401, MODICA1402, MODICA1500, MODICA1501, MODICA1550, MODICA1600, MODICA1601, MODICA1700, MODICA1710, MODICA1711, MODICA1716, MODICA1800, MODICA1801, MODICA1802, MODICA1803, MODICA1804, MODICA1805, MODICA1806, MODICA1807, MODICA1808, MODICA1900, MODICA2000, MODICA2001, MODICA2002, MODICA2003, MODICA2004, MODICA2100, MODICA2101, MODICA2200, MODICA2300, MODICA2400, MODICA2500, MODICA2502, MODICA2600, MODICA2601, MODICA2700, MODICA2800, MODICA2900, MODICA3000, MODICA3100, MODICA3200, MODICA3300, MODICA3301, MODICA3302, MODICA3500, MODICA3501, MODICA3502, MODICA3600, MODICA3700, MODICA3800, MODICA3900, MODICA4000, MODICA4100, MODICA4200, MODICA4201, MODICA4300, MODICA4301, MODICA4302, MODICA4400, MODICA4500, MODICA4501, MODICA4600, MODICA4700, MODICA4800, MODICA5000, MODICA5500, MODICA5600, MODICA5700, MODICA5701, MODICA5800, MODICA6000, MODICA6001, MODICA6500, MODICA6600, MODICA6601, MODICA6602, MODICA6603, MODICA6604, MODICA6610, MODICA6611, MODICA6700, MODICA6701, MODICA6702, MODICA6703, MODICA6710, MODICA6711, MODICA6770, MODICA6780, MODICA6790, MODICA6800, MODICA6900, MODICA7000, MODICA7200, MODICA7400, MODICA7500, MODICA7600, MODICA8000, MODICA8200, MODICA8500, MODICA8600, MODICA8800, MODICA8810, MODICA8820, MODICA8821, MODICA8830, MODICA8831, MODICA9000, MODICA9100, MODICA9500, MODICA9600

Revision

5

Revision Date

07 Jun 2023

Key/Legend

< Less Than

> Greater Than

AICS Australian Inventory of Chemical Substances

atm Atmosphere

CAS Chemical Abstracts Service (Registry Number)

cm² Square Centimetres

CO2 Carbon Dioxide

COD Chemical Oxygen Demand

deg C (°C) Degrees Celcius

EPA (New Zealand) Environmental Protection Authority of New Zealand

deg F (°F) Degrees Farenheit

g Grams

g/cm³ Grams per Cubic Centimetre

g/l Grams per Litre

HSNO Hazardous Substance and New Organism

IDLH Immediately Dangerous to Life and Health

immiscible Liquids are insoluable in each other.

inHg Inch of Mercury

inH2O Inch of Water

K Kelvin

kg Kilogram

kg/m³ Kilograms per Cubic Metre

lb Pound

LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.

LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

ltr or L Litre

m³ Cubic Metre

mbar Millibar

mg Milligram

mg/24H Milligrams per 24 Hours

mg/kg Milligrams per Kilogram

mg/m³ Milligrams per Cubic Metre

Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre

mmH2O Millimetres of Water

mPa.s Millipascals per Second

N/A Not Applicable

NIOSH National Institute for Occupational Safety and Health

NOHSC National Occupational Health and Safety Commission

OECD Organisation for Economic Co-operation and Development

Oz Ounce

PEL Permissible Exposure Limit

Pa Pascal

ppb Parts per Billion

ppm Parts per Million

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ppm/2h Parts per Million per 2 Hours

ppm/6h Parts per Million per 6 Hours

psi Pounds per Square Inch

R Rankine

RCP Reciprocal Calculation Procedure

STEL Short Term Exposure Limit

TLV Threshold Limit Value

tne Tonne

TWA Time Weighted Average

ug/24H Micrograms per 24 Hours

UN United Nations

wt Weight