



SAFETY DATA SHEET TRICALCIUM PHOSPHATE REVISION 2, DATE 24 FEB 21

1. IDENTIFICATION

Product Name	Tricalcium Phosphate
Other Names	Calcium orthophosphate; Calcium phosphate, tribasic; Tricalcium orthophosphate
Uses	FOOD INDUSTRY: Used as an anticoagulant (flour), nutritional supplement, Calcium intensifier, pH regulator and buffer; as an additive for milk powder, sweets, pudding, flavouring and meat; and as a refining agent for animal oil and yeast food.
Chemical Family	No Data Available
Chemical Formula	$\text{Ca}_3(\text{PO}_4)_2$
Chemical Name	Phosphoric acid, calcium salt (2:3)
Product Description	E-341

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

Redox Ltd
Corporate Office Sydney
Locked Bag 15 Minto NSW 2566 Australia
2 Swettenham Road Minto NSW 2566 Australia
All Deliveries: 4 Holmes Road Minto NSW 2566 Australia

Phone +61 2 9733 3000
Fax +61 2 9733 3111
E-mail sydney@redox.com
Web www.redox.com
ABN 92 000 762 345

Australia
Adelaide
Brisbane
Melbourne
Perth
Sydney
New Zealand
Auckland
Christchurch
Hawke's Bay
UK
London
Malaysia
Kuala Lumpur
USA
Los Angeles
Oakland
Mexico
Saltillo



Globally Harmonised System

Hazard Classification	NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Signal Word	None

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	NOT 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
Tricalcium phosphate	Ca ₃ (PO ₄) ₂	7758-87-4	<=100 %

4. FIRST AID MEASURES*Description of necessary measures according to routes of exposure*

Swallowed	IF SWALLOWED: Rinse mouth, then drink a glass of water. Get medical advice/attention if you feel unwell.
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 10 - 15 minutes. If eye irritation persists, get medical advice/attention.
Skin	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash 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. If respiratory symptoms persist, get medical advice/attention.
Advice to Doctor	All treatments should be based on observed signs and symptoms of distress in the patient.
Medical Conditions Aggravated by Exposure	Skin/dermal disorders, disorders of the lungs.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
Flammability Conditions	Non-combustible material.

Extinguishing Media	If material is involved in a fire, use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire and Explosion Hazard	Decomposes on heating emitting toxic fumes.
Hazardous Products of Combustion	Fire or heat may produce irritating, toxic and/or corrosive fumes, including oxides of calcium, oxides of phosphorus.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
Personal Protective Equipment	Wear SCBA and chemical splash suit. SCBA and structural firefighter's uniform may 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. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Collect material (Sweep or vacuum up) and seal in properly labelled containers or drums for disposal (see SECTION 13).
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.
Decontamination	Wash down area. Prevent runoff to drains or waterways.
Environmental Precautionary Measures	Prevent entry into drains and waterways. If contamination of sewers or waterways has occurred advise local emergency services.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Use proper personal protective equipment (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. Handle in accordance with good industrial hygiene and safety practice. Minimise dust generation and accumulation. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed when not in use - check regularly for spills. Keep away from incompatible materials (see SECTION 10).
Container	Keep in the original container.

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	Adequate ventilation system is required in order to keep airborne concentrations low. Provide appropriate exhaust ventilation at places where dust is formed.
Personal Protection Equipment	- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Dust

mask/particulate respirator (refer to AS/NZS 1715 & 1716).

- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses or goggles.

- Hand protection: Handle with gloves. Recommended: Impervious protective gloves.

- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes.

Special Hazards Precautions

No information available.

Work Hygienic Practices

Do not eat, drink or smoke while using this product. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Powder or granular
Odour	Odourless
Colour	White
pH	6 - 8 (10% solution)
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	1670 °C
Freezing Point	No Data Available
Solubility	Slightly soluble in water
Specific Gravity	No Data Available
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 material.
Reactions That Release Gases or Vapours	Decomposes on heating emitting toxic fumes, including oxides of calcium, oxides of phosphorus.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	No dangerous reactions known under conditions of normal use.
Chemical Stability	Stable under normal temperatures and pressures.
Conditions to Avoid	Avoid generating dust. Avoid elevated temperatures.
Materials to Avoid	Incompatible/reactive with strong acids, strong oxidising agents.
Hazardous Decomposition Products	Decomposes on heating emitting toxic fumes, including oxides of calcium, oxides of phosphorus.
Hazardous Polymerisation	Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	Information on possible routes of exposure: <ul style="list-style-type: none">- Ingestion: This substance is commonly used as a component in food, vitamins and pharmaceutical tablets, and may be safely consumed in moderate amounts. Ingestion of large quantities may cause nausea, vomiting, diarrhoea and abdominal cramps.- Eye contact: Exposure to dust may cause mechanical irritation.- Skin contact: Exposure to dust may cause mechanical irritation.- Inhalation: Exposure to (nuisance) dust may cause irritation, affecting the lungs (typically reversible). Chronic effects: No information available.
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	No information available.
Persistence/Degradability	No information available.
Mobility	No information available.
Environmental Fate	Prevent entry into drainage system, surface or ground water.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of content/container in accordance with local/regional/national regulations.
----------------------------	--

Special Precautions for Land Fill No information available.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	Tricalcium 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	Tricalcium 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	Tricalcium 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 (United States of America)

US DOT

Proper Shipping Name	Tricalcium 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	Tricalcium 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	Tricalcium 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)
---------------------------------------	---

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 Not Hazardous

National/Regional Inventories

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

16. OTHER INFORMATION

Related Product Codes	CAPHOS1038, CAPHOS1090, CAPHOS1091, TRCAPH3200, TRCAPH3205, TRCAPH3230, TRCAPH3300, TRCAPH3400, TRCAPH3420, TRCAPH3500, TRCAPH3501, TRCAPH3502, TRCAPH3506, TRCAPH3510, TRCAPH3515, TRCAPH3520, TRCAPH3530, TRCAPH3602, TRCAPH5300, TRCAPH5310, TRCAPH5320, TRCAPH5330, TRCAPH5340, TRCAPH9000, TRCAPH9020, TRCAPO0015
Revision	2
Revision Date	24 Feb 2021
Key/Legend	<p>< Less Than > Greater Than</p> <p>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 Fahrenheit g Grams g/cm³ Grams per Cubic Centimetre g/l Grams per Litre</p>

HSNO Hazardous Substance and New Organism

IDLH Immediately Dangerous to Life and Health

immiscible Liquids are insoluble 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

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