



SAFETY DATA SHEET

SODIUM HEXAMETAPHOSPHATE

REVISION 5, DATE 16 SEP 21

1. IDENTIFICATION

Product Name	Sodium hexametaphosphate
Other Names	Calgon; SHMP; sodium metaphosphate
Uses	Fertilisers; Intermediates; Laboratory chemicals; Binding agents; Complexing agents; Corrosion inhibitors, anti-scaling agents; Fillers; Food/feedstuff additives; pH-regulating agents; Softeners; Stabilisers.
Chemical Family	No Data Available
Chemical Formula	H ₆ O ₁₈ P ₆ .6Na
Chemical Name	Metaphosphoric acid (H ₆ P ₆ O ₁₈), hexasodium salt
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

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)
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Sodium hexametaphosphate	H6O18P6.6Na	10124-56-8	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth, then drink 1 or 2 glasses of water. Do not induce vomiting unless directed to do so by medical personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical advice/attention. Never give anything by mouth to an unconscious person.
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.
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. If respiratory symptoms persist, get medical advice/attention. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
Advice to Doctor	Treat symptomatically and supportively. *The toxicity of phosphates is because of their ability to sequester calcium. Systemic metabolic acidosis may result as this material is believed to be hydrolyzed to orthophosphates when ingested (before absorption). Tetany may also occur as a result of reduction in serum level of ionic calcium.
Medical Conditions Aggravated by Exposure	Persons with pre-existing skin, eye or respiratory disease may be at increased risk.

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. In a fire, it may melt with loss of steam.
Extinguishing Media	If material is involved in a fire, use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction.

*Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Fire and Explosion Hazard	When heated to decomposition, it emits highly toxic fumes.
Hazardous Products of Combustion	Thermal decomposition can lead to release of irritating and toxic gases and vapours, including oxides of phosphorus, sodium oxides.
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, especially in confined areas. ELIMINATE all ignition sources. Do not touch or walk through spilled material. Avoid dust formation. Avoid breathing dust/vapours and contact with eyes, skin and clothing.
Clean Up Procedures	Take up mechanically, placing in appropriate containers for disposal (see SECTION 13).
Containment	Stop leak if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.
Decontamination	Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Environmental Precautionary Measures	Prevent entry into sewers and waterways. Local authorities should be advised if significant spillages cannot be contained.
Evacuation Criteria	Spill or leak area should be isolated immediately. Evacuate personnel to safe areas. Keep unauthorised personnel away.
Personal Precautionary Measures	Use appropriate 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, especially in confined areas. Handle in accordance with good industrial hygiene and safety practice. Avoid generating dust. Avoid breathing dust/vapours and contact with eyes, skin and clothing. Do not ingest. Wear suitable protective clothing (see SECTION 8). Take precautionary measures against static discharges.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed when not in use. Hygroscopic - Protect from moisture. Keep away from heat and sources of ignition - No smoking. Keep away from food/feedstuffs and incompatible materials (see SECTION 10).
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	There are no occupational exposure limit values for this substance. 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	Derived no-effect levels (DNELs) for Workers: - Long-term, systemic effects (Inhalation): 5.289 mg/m ³ Predicted no-effect concentrations (PNECs):

- Freshwater: 0.1 mg/l
- Marine water: 0.01 mg/l
- Intermittent release: 1 mg/l
- Sewage treatment plant (STP): 100 mg/l

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 respirator (refer to AS/NZS 1715 & 1716).
- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Wear safety glasses with side shields or chemical safety goggles.
- Hand protection: Handle with gloves. Recommended: Impervious gloves.
- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Wear lab coat; Overalls, Boots.

Special Hazards Precautions

No information available.

Work Hygienic Practices

Do not eat, drink or smoke when using this product. Wash hands before breaks and at the end of workday. Take off contaminated clothing and wash it before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Crystalline powder, granules, pellets.
Odour	Odourless
Colour	White
pH	7 (1% solution/water)
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	1,500 °C
Melting Point	>450 °C
Freezing Point	No Data Available
Solubility	Moderately soluble in water - Insoluble in organic solvents
Specific Gravity	1.25 (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	2.484 g/cm ³
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	Depolymerises in aqueous solutions to form sodium trimetaphosphate and sodium orthophosphates.
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. In a fire, it may melt with loss of steam.
Reactions That Release Gases or Vapours	Thermal decomposition can lead to release of irritating and toxic gases and vapours, including oxides of phosphorus, sodium oxides.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	The product is non-reactive under normal conditions of use, storage and transport. Slightly corrosive in presence of steel.
Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Avoid generating dust. Protect from moisture. Avoid excess heat.
Materials to Avoid	Incompatible/reactive with strong oxidising agents, strong acids, strong bases.
Hazardous Decomposition Products	Thermal decomposition can lead to release of irritating and toxic gases and vapours, including oxides of phosphorus, sodium oxides.
Hazardous Polymerisation	Polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	<ul style="list-style-type: none"> - Acute toxicity: May be harmful if swallowed. This salt appears to be hydrolyzed within the bowel to phosphoric acid. May cause gastrointestinal tract irritation with nausea, vomiting, and diarrhoea. - Skin corrosion/irritation: May cause skin irritation. Not irritating (Rabbit). - Eye damage/irritation: Dust contact with the eyes can lead to mechanical irritation. Not irritating (Rabbit). - Respiratory/skin sensitisation: Not sensitising (Mouse). - Germ cell mutagenicity: Bacterial reverse mutation assay, results: negative. - Carcinogenicity: The test material was considered devoid of carcinogenic potential. - Reproductive toxicity: The results provide support for the argument that there is no concern with regard to effects of sodium metaphosphate on reproduction. - STOT (single exposure): May cause respiratory tract irritation. May affect behavior/central nervous system/peripheral nervous system (somnolence, convulsions, lethargy, and flaccid paralysis), urinary system (kidneys-renal failure, acute tubular necrosis). It may also cause heart disturbances (fall in blood pressure, slow pulse) and blood chemistry effects (reduction of serum level of calcium). - STOT (repeated exposure): The toxicity of phosphates is because of their ability to sequester calcium. Sodium hexametaphosphate may sequester calcium and cause calcium phosphate deposits in the kidneys. Chronic ingestion or inhalation may induce systemic phosphorous poisoning. Liver damage, kidney damage, jaw/tooth abnormalities, blood disorders and cardiovascular effects can result. - Aspiration toxicity: No information available.
Acute	
Ingestion	Acute toxicity (Oral): - LD50, Rat: >2,000 mg/kg

Inhalation	Acute toxicity (Inhalation): - LC50, Rat: >3.69 mg/L (4 h) dust/mist.
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic toxicity: - LC50, Fish (<i>Oncorhynchus mykiss</i>): >100 mg/L (96 h) [OECD Guideline 203]. - EC50, Crustacea (<i>Daphnia magna</i>): >485 mg/L (48 h) [EPA OTS 797.1300]. - EC50, Algae (<i>Desmodesmus subspicatus</i>): >100 mg/L (72 h) [OECD Guideline 201].
Persistence/Degradability	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise. The product itself and its products of degradation are not toxic.
Mobility	No information available.
Environmental Fate	Slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Bioaccumulation Potential	No bioaccumulation potential.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container via a licensed contractor and 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	Sodium Hexametaphosphate
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	Sodium Hexametaphosphate
Class	No Data Available
Subsidiary Risk(s)	No Data Available

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	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	Sodium Hexametaphosphate
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	Sodium Hexametaphosphate
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	Sodium hexametaphosphate
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	Sodium Hexametaphosphate
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	Not Hazardous
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National/Regional Inventories

Australia (AIRC)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Listed
China (IECSC)	Listed
Europe (EINECS)	233-343-1
Europe (REACH)	01-2119485651-33-XXXX
Japan (ENCS/METI)	1-497
Korea (KECI)	KE-19835
Malaysia (EHS Register)	Not Listed
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Listed
Switzerland (Giftlist 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined

Taiwan (NCSR)

Listed

USA (TSCA)

Listed

16. OTHER INFORMATION

Related Product Codes

SOHEXA1000, SOHEXA1001, SOHEXA1002, SOHEXA1003, SOHEXA1004, SOHEXA1005, SOHEXA1006, SOHEXA1007, SOHEXA1008, SOHEXA1009, SOHEXA1010, SOHEXA1011, SOHEXA1012, SOHEXA1013, SOHEXA1014, SOHEXA1015, SOHEXA1016, SOHEXA1017, SOHEXA1018, SOHEXA1019, SOHEXA1020, SOHEXA1021, SOHEXA1022, SOHEXA1023, SOHEXA1024, SOHEXA1025, SOHEXA1026, SOHEXA1027, SOHEXA1028, SOHEXA1029, SOHEXA1030, SOHEXA1031, SOHEXA1032, SOHEXA1033, SOHEXA1034, SOHEXA1035, SOHEXA1036, SOHEXA1037, SOHEXA1038, SOHEXA1039, SOHEXA1040, SOHEXA1041, SOHEXA1042, SOHEXA1043, SOHEXA1044, SOHEXA1045, SOHEXA1047, SOHEXA1052, SOHEXA1060, SOHEXA1500, SOHEXA1800, SOHEXA1801, SOHEXA1802, SOHEXA1803, SOHEXA1804, SOHEXA1805, SOHEXA1806, SOHEXA1807, SOHEXA1808, SOHEXA1809, SOHEXA1810, SOHEXA1811, SOHEXA2000, SOHEXA2500, SOHEXA2501, SOHEXA2800, SOHEXA3000, SOHEXA3100, SOHEXA3400, SOHEXA3401, SOHEXA3402, SOHEXA3403, SOHEXA3502, SOHEXA3600, SOHEXA3800, SOHEXA4000, SOHEXA4001, SOHEXA6000, SOHEXA6600, SOHEXA7000, SOHEXA7001, SOHEXA7100, SOHEXA7500, SOHEXA7501, SOHEXA7800, SOHEXA8000, SOHEXA8001, SOHEXA8500, SOHEXA8600, SOHEXF1000, SOHEXF1001, SOHEXF1002, SOHEXF1003, SOHEXF1500, SOHEXF1800, SOHEXF2000, SOHEXF3100, SOHEXF3101, SOHEXF3102, SOHEXF3103, SOHEXF3140, SOHEXF3200, SOHEXF4000, SOHEXF4100, SOHEXF4200, SOHEXF4300, SOHEXF4400, SOHEXF4500, SOHEXF4700, SOHEXF5000, SOHEXF5200, SOHEXF5500, SOHEXF5600, SOHEXF5700, SOHEXF6000, SOHEXF7000, SOHEXF8000, SOHEXF9000, SOHEXF9100

Revision

5

Revision Date

16 Sep 2021

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

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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