

1. IDENTIFICATION

Product Name	Phosphonates Na5 A.T.M.P.
Other Names	Aqueous sodium solution of amino tri(methylene phosphonic acid)
Uses	Used as a sequestering agent and calcium carbonate scale inhibitor for applications in industrial water treatment, industrial cleaning, oil production and textile bleaching.
Chemical Family	No Data Available
Chemical Formula	C3H7NO9P3.5Na
Chemical Name	Phosphonic acid, [nitrilotris(methylene)]tris-, pentasodium salt
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty 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	Serious Eye Damage/Irritation - Category 2B Acute Hazard To The Aquatic Environment - Category 3		
Signal Word	Warning		
Hazard Statements	H320	Causes eye irritation.	
	H402	Harmful to aquatic life.	
Precautionary Statements	Prevention	P264	Wash hands and contaminated body thoroughly after handling.
		P273	Avoid release to the environment.
	Response	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P337 + P313	If eye irritation persists: Get medical advice/attention.
	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)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Phosphonic acid, [nitrotris(methylene)]tris-, pentasodium salt	C3H7NO9P3.5Na	2235-43-0	38 - 42 %
Phosphorous Acid	No Data Available	13598-36-2	<=3 %
Sodium Chloride	No Data Available	7647-14-5	<=1 %
Water	No Data Available	7732-18-5	BALANCE %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	Immediate first aid is not likely to be required. Rinse mouth with water. Give water to drink. Do NOT induce vomiting. If vomiting occurs, lean patient forward to prevent aspiration into the lungs. Seek medical attention.
Eye	Immediate first aid is not likely to be required. Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Take care not to rinse contaminated water into the non-affected eye. Seek immediate medical attention.
Skin	Immediate first aid is not likely to be required. Remove contaminated clothing. Flush affected area with plenty of running water for at least 15 minutes. If irritation occurs, seek medical attention.
Inhaled	Immediate first aid is not likely to be required. Remove victim from exposure to fresh air. If not breathing, apply artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of patient.
Medical Conditions Aggravated by Exposure	No information available on medical conditions which are aggravated from exposure to this product.

5. FIRE FIGHTING MEASURES

General Measures	Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk.
Flammability Conditions	No Data Available
Extinguishing Media	Extinguish with water spray, alcohol-resistant foam, carbon dioxide, dry chemical.
Fire and Explosion Hazard	Non flammable aqueous solution.
Hazardous Products of Combustion	Carbon monoxide (CO), carbon dioxide, nitrogen oxides (Nox), phosphines.
Special Fire Fighting Instructions	Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. All combustion residues and contaminated water from fire-fighting should be disposed of according to regulations.
Personal Protective Equipment	Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves).
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	Avoid accidents, clean up immediately. Increase ventilation. Avoid walking through spilled product as it is slippery when spilt. Use clean, non-sparking tools and equipment. Shut off all possible sources of ignition.
Clean Up Procedures	Soak up spilled product using absorbent non-combustible material such as sand or soil. Avoid using sawdust or cellulose. When saturated, collect the material and transfer to a suitable, labelled chemical waste container and dispose of promptly.
Containment	Stop leak if safe to do so. Isolate the danger area.
Decontamination	Flush spill area with water.
Environmental Precautionary Measures	Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management.
Evacuation Criteria	Evacuate all unnecessary personnel.
Personal Precautionary Measures	Personnel involved in the clean up should wear full protective clothing as listed in section 8.

7. HANDLING AND STORAGE

Handling	Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. These practices include avoiding unnecessary exposure and removal of material from eyes, skin and clothing. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product vapours.
Storage	Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. This product is not classified dangerous for transport according to The Australian Code for the Transport of Dangerous Goods By Road and Rail.
Container	Store in original packaging as approved by manufacturer. Unsuitable materials: Carbon steel, mild steel, aluminium or any other metals.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No exposure standard has been established for this product by The Safe Work Australia (SWA). NOTE: The exposure value at the TWA is the average airborne concentration of a particular substance when
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calculated over a normal 8 hour working day for a 5 day working week.

These exposure standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Exposure Limits	No Data Available
Biological Limits	No information available on biological limit values for this product.
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	RESPIRATOR: Use approved respiratory protection equipment when airborne exposure is excessive. Consult the respirator manufacturer to determine the appropriate type equipment for a given application. Observe respirator use limitations specified by the manufacturer (AS/NZS1715). EYES: Chemical splash goggles (AS/NZS1337). HANDS: Wearing protective gloves is recommended (AS2161). CLOTHING: Standard work uniform/clothing and safety footwear (AS3765/2210).
Work Hygienic Practices	Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and removal of material from eyes, skin and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Liquid
Odour	Ammonia-like
Colour	Clear to pale yellow
pH	10 - 11 10 g/L (25 deg C)
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	-16 °C
Freezing Point	-16 °C
Solubility	Completely Miscible
Specific Gravity	1.40 - 1.45
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	57.5 mm ² /s (@ 20 °C)
Volatile Percent	No Data Available
VOC Volume	No Data Available

Additional Characteristics	Kinematic Viscosity: 57.5 mm ² /s @ 20 Deg C 17.4 mm ² /s @40 Deg C 7.7 mm ² /s @ 60 deg C
Potential for Dust Explosion	Product is a liquid.
Fast or Intensely Burning Characteristics	No Data Available
Flame Propagation or Burning Rate of Solid Materials	No Data Available
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No Data Available
Properties That May Initiate or Contribute to Fire Intensity	No Data Available
Reactions That Release Gases or Vapours	No Data Available
Release of Invisible Flammable Vapours and Gases	Combustion products include flammable phosphines.

10. STABILITY AND REACTIVITY

Chemical Stability	Product is stable under normal conditions of use, storage and temperature.
Conditions to Avoid	Freezing Temperatures.
Materials to Avoid	Contact with strong oxidizing agents. Contact with strong acid solution.
Hazardous Decomposition Products	Carbon monoxide (CO), carbon dioxide, nitrogen oxides (Nox), phosphines.
Hazardous Polymerisation	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

General Information	<p>Oral LD50 Rat: 17800 mg/Kg Dermal LD50 Rabbit: 15800 mg/Kg Skin irritation: Particularly non irritating to skin Eye damage: Mild irritant</p> <p>Repeat dose toxicity: Rat, subcutaneous, acute, slight effects on bone mineralization were noted following subcutaneous injection. Rat, diet, chronic, produced effects on body weight, serum enzymes and/or organ weights in repeat dose studies. Data obtained on similar product.</p> <p>Target organs affected: body weight, liver, spleen, kidneys</p> <p>Developmental toxicity: Mouse & rat, gavage, No birth defects were noted in rats given the active ingredient orally during pregnancy.</p> <p>Reproductive toxicity: Rat, diet, 3 generation This material had no effect on reproduction or fertility. Data obtained on similar products.</p> <p>Carcinogenicity: Rat, diet, chronic No clear evidence of treatment related tumors. Data obtained on similar product.</p> <p>Mutagenicity: No genetic effects were noted in standard bacterial tests. No genetic effects were observed in standard tests with animal cells.</p>
Carcinogen Category	No Data Available

12. ECOLOGICAL INFORMATION

Invertebrates: 48 h EC50 Water flea (Daphnia magna) > 297 mg/L

Ecotoxicity	Fish: 96 h LC50 Rainbow trout (<i>Oncorhynchus mykiss</i>) > 330 mg/L Algae: 96 h EC50 Algae (<i>Selenastrum capricornutum</i>) 20 mg/L; Algae growth inhibition is due to ability of this product to complex materials not to toxicity per se.
Persistence/Degradability	Closed Bottle (OECD 301D) 20% 30d Zahn-Wellens (OECD 302B) 23% 28d Modified SCAS 90% Inherently biodegradable. Modified OECD Screening (OECD 301E) theoretical CO2 evolution 20% Not readily biodegradable.
Mobility	No information available on mobility for this product.
Environmental Fate	Avoid contaminating waterways, drains and sewers.
Bioaccumulation Potential	No information available on bioaccumulation for this product.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.
Special Precautions for Land Fill	Contact a specialist disposal company or the local waste regulator for advice.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	Phosphonates Na5 A.T.M.P.
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

Land Transport (Malaysia)

ADR

Proper Shipping Name	Phosphonates Na5 A.T.M.P.
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

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	Phosphonates Na5 A.T.M.P.
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

Land Transport (United States of America)

US DOT

Proper Shipping Name	Phosphonates Na5 A.T.M.P.
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

Sea Transport

IMDG Code

Proper Shipping Name	Phosphonates Na5 A.T.M.P.
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

Air Transport

IATA DGR

Proper Shipping Name	Phosphonates Na5 A.T.M.P.
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

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 Assessed
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National/Regional Inventories

Australia (AICS)	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)	Not Determined
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	PHOSPN1000, PHOSPN1001, PHOSPN1002, PHOSPN1003, PHOSPN1004, PHOSPN1100, PHOSPN1200, PHOSPN2200, PHOSPN2220, PHOSPN2225, PHOSPN3000, PHOSPN3020
Revision	3
Revision Date	17 Jul 2014
Key/Legend	<p>< 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</p>

g/l Grams per Litre
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