



SAFETY DATA SHEET
SODIUM PERBORATE, TETRAHYDRATE
REVISION 5, DATE 10 DEC 2020

1. IDENTIFICATION

Product Name	Sodium perborate, tetrahydrate
Other Names	Sodium perborate [CAS#11138-47-9]
Uses	Bleaching component of washing and cleaning agents.
Chemical Family	No Data Available
Chemical Formula	$\text{NaBO}_3 \cdot 4\text{H}_2\text{O}$ / $\text{NaBO}_2 \cdot \text{H}_2\text{O}_2 \cdot 3\text{H}_2\text{O}$
Chemical Name	Perboric acid ($\text{HBO}(\text{O}_2)$), sodium salt, tetrahydrate
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		Serious Eye Damage/Irritation - Category 1 Toxic To Reproduction - Category 1B Specific Target Organ Toxicity (Single Exposure) - Category 3	
Pictograms		  	
Signal Word		Danger	
Hazard Statements		H318	Causes serious eye damage.
		H360FD	May damage the unborn child. Suspected of damaging fertility.
		H335	May cause respiratory irritation.
Precautionary Statements	Prevention	P201	Obtain special instructions before use.
		P261	Avoid breathing dust.
		P271	Use only outdoors or in a well-ventilated area.
		P280	Wear protective gloves/protective clothing/eye protection/face protection.
	Response	P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor.
		P308 + P313	IF exposed or concerned: Get medical advice/ attention.
		P304 + P340	IF INHALED: Remove victim to fresh air and keep comfortable for breathing.
		P312	Call a POISON CENTER or doctor if you feel unwell.
	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)
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Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Physical Hazards	5.1.1C	Oxidising substances that are liquids or solids: low hazard
	Health Hazards	6.1E	Substances that are acutely toxic –May be harmful, Aspiration hazard
		6.3B	Substances that are mildly irritating to the skin
		6.4A	Substances that are irritating to the eye
		6.6A	Substances that are known or presumed human mutagens
		6.8B	Substances that are suspected human reproductive or developmental toxicants

6.9B

Substances that are harmful to human target organs or systems

3. COMPOSITION/INFORMATION ON INGREDIENTS*Ingredients*

Chemical Entity	Formula	CAS Number	Proportion
Sodium perborate, tetrahydrate	NaBO ₃ ·4H ₂ O / NaBO ₂ ·H ₂ O ₂ ·3H ₂ O	10486-00-7	>=96 - 100 %

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

Swallowed	IF SWALLOWED: Rinse mouth with water. Do not induce vomiting. Get immediate 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. Protect unharmed eye. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. Immediately call a Poison Centre or doctor/physician for advice.
Skin	IF ON SKIN: Remove contaminated clothing and shoes immediately. Flush skin with running water for at least 15 minutes. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a Poison Centre or doctor/physician for advice. Apply resuscitation if victim is not breathing - Administer oxygen if breathing is difficult.
Advice to Doctor	If exposed or concerned, get medical advice/attention. Treat symptomatically. Ensure that attending medical personnel are aware of the identity and nature of the product(s) involved, and take precautions to protect themselves.
Medical Conditions Aggravated by Exposure	No information available.

5. FIRE FIGHTING MEASURES

General Measures	Remove persons from danger area. If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
Flammability Conditions	Product is not flammable; May burn but does not ignite readily.
Extinguishing Media	Use Carbon dioxide (CO ₂), foam or water spray for extinction - Do not use organic media.
Fire and Explosion Hazard	Product does not present an explosion hazard.
Hazardous Products of Combustion	Fire may produce irritating, toxic and/or corrosive toxic fumes, including oxygen.
Special Fire Fighting Instructions	Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Personal Protective Equipment	Wear self-contained breathing apparatus (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. ELIMINATE all ignition sources. Do not touch or walk through spilled material. Avoid formation of dust. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Pick up mechanically. Send for recovery or disposal in suitable receptacles (see SECTION 13).
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Prevent dust cloud.
Decontamination	Clean the affected area carefully with water. Dispose of the material collected according to regulations.
Environmental Precautionary Measures	Do not allow to enter sewers, surface or ground water.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Use personal protective clothing 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. Obtain special instructions before use - Do not handle until all safety precautions have been read and understood. Avoid formation of dust. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Wear protective gloves/protective clothing/eye protection/face protection (see SECTION 8). The usual precautionary measures are to be adhered to when handling chemicals.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Protect from humidity and water. Keep away from heat and sources of ignition - No smoking. Keep away from foodstuffs and incompatible materials (see SECTION 10). Store locked up. - Maximum storage temperature: < 40 °C - Recommended storage temperature: < 30 °C
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace. 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). Derived no-effect levels (DNELs): Sodium perborate, monohydrate (CAS No. 10332-33-9): - Oral: Long-term, systemic effects: 0.36 mg/kg bw/day (General population). - Dermal: Long-term, systemic effects: 36 mg/kg bw/day (General population). - Dermal: Long-term, systemic effects: 101 mg/kg bw/day (Worker). - Inhalative: Long-term, local effects: 0.5 mg/m ³ (General population). - Inhalative: Long-term, local effects: 2 mg/m ³ (Worker). - Inhalative: Long-term, systemic effects: 0.5 mg/m ³ (General population). - Inhalative: Long-term, systemic effects: 2 mg/m ³ (Worker).
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: Use suitable respiratory protective device when high concentrations are present. Recommended: For short term use, Filter P1 or FFP1 (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Gauze goggles. - Hand protection: Wear protective gloves. Recommended: PVC or rubber gloves. Penetration time of glove material: >=240 min. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Protective work clothing.

Special Hazards Precautions	No information available.
Work Hygienic Practices	Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and at the end of work. Take off contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Free-flowing, crystalline salt
Odour	Odourless
Colour	White
pH	10-15 g/l (20 °C)
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	338 K (1013 hPa)
Freezing Point	No Data Available
Solubility	23 g/l in water 20°C
Specific Gravity	No Data Available
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	700 - 950 kg/m ³
Corrosion Rate	No Data Available
Decomposition Temperature	ca. 60 °C
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	153.88 g/mol
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	95% >0.10 mm (Typical grain size)
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	Active Oxygen content: ca. 10 %
Potential for Dust Explosion	Product does not present an explosion hazard.
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	Product is not flammable; May burn but does not ignite readily.

Reactions That Release Gases or Vapours	Fire may produce irritating, toxic and/or corrosive toxic fumes, including oxygen.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	Exothermic thermal decomposition. Thermal decomposition starts at 60 °C.
Chemical Stability	Stable at environment temperature.
Conditions to Avoid	To avoid thermal decomposition, do not overheat. Protect from heat and direct sunlight. Protect from humidity and water.
Materials to Avoid	Incompatible/reactive with reducing agents, alkalis (caustic solutions, lyes), acids.
Hazardous Decomposition Products	No dangerous decomposition products known. Fire may produce irritating, toxic and/or corrosive toxic fumes, including oxygen.
Hazardous Polymerisation	No information available.

11. TOXICOLOGICAL INFORMATION

General Information	<ul style="list-style-type: none"> - Acute toxicity: Based on available data, the classification criteria are not met. May be harmful if swallowed; Irritation of gastric mucosa. - Skin corrosion/irritation: Based on available data, the classification criteria are not met. May cause skin irritation. - Eye damage/irritation: Causes serious eye damage. - Respiratory/skin sensitisation: Based on available data, the classification criteria are not met. - Germ cell mutagenicity: Based on available data, the classification criteria are not met. - Carcinogenicity: Based on available data, the classification criteria are not met. - Reproductive toxicity: May damage the unborn child. Suspected of damaging fertility. - STOT (single exposure): May cause respiratory irritation. - STOT (repeated exposure): Based on available data, the classification criteria are not met. - Aspiration toxicity: Based on available data, the classification criteria are not met.
Acute	
Ingestion	Acute toxicity (Oral): - LD50, Rat: 2,567 mg/kg [OECD Guideline 401].
Other	Acute toxicity (Dermal): - LD50, Rabbit: >2,000 mg/kg [OECD Guideline 402].
Chronic	
Ingestion	Sub-acute to chronic toxicity (Oral): - NOEL, Rat: <1,000 mg/kg (28-day study).
Reproduction	Prenatal development toxicity (fetotoxicity): - NOAEL, Rat (female): 100 mg/kg bw/day [OECD 414]. Prenatal development toxicity (maternal toxicity): - NOAEL, Rat (female): 100 mg/kg bw/day [OECD 414].
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic toxicity: - LC50, Fish (Brachydanio rerio): 51 mg/l (96 h) [OECD Guideline 203]. - EC50, Crustacea (Daphnia magna): 11 mg/l (48 h) [OECD Guideline 202]. - EC50, Algae (Pseudokirchneriella subcapitata): 3.3 mg/l [OECD Guideline 201]. - EC50, Algae (Desmodesmus subspicatus): 26.8 mg/l.
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- NOEC, Fish (Brachydanio rerio): 25 mg/l (96 h).
- NOEC, Crustacea (Daphnia magna): 8 mg/l (48 h).

Persistence/Degradability	Readily biodegradable. The product is unstable in water; Abiotic degradation by hydrolysis and reduction.
Mobility	Sodium perborate has no potential for adsorption onto sediments. It is readily degradable in aqueous media; Therefore, neither direct nor indirect exposure of soil is expected.
Environmental Fate	Slightly hazardous for water - Do not allow to enter sewers, surface or ground water.
Bioaccumulation Potential	Non-significant accumulation in organisms; Due to the ionic nature of sodium perborate and its degradation products, a potential for bioaccumulation is not to be expected.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container in accordance with local/regional/national regulations; must be specifically treated adhering to official regulations.
Special Precautions for Land Fill	Contaminated packaging: Packagings that may not be cleansed are to be disposed of in the same manner as the product.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	Sodium perborate, tetrahydrate
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 LAND transport.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	Sodium perborate, tetrahydrate
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 LAND transport.

Land Transport (New Zealand)

NZS5433

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Proper Shipping Name	Sodium perborate, tetrahydrate
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 perborate, tetrahydrate
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 perborate, tetrahydrate
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 perborate, tetrahydrate
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

HSR004017

National/Regional Inventories**Australia (AIC)**

Listed

Canada (DSL)

Listed

Canada (NDSL)

Not Determined

China (IECSC)

Listed

Europe (EINECS)

234-390-0

Europe (REACH)

01-2119516039-43-0002

Japan (ENCS/METI)

Listed

Korea (KECI)

Not Determined

Malaysia (EHS Register)

Not Determined

New Zealand (NZIoC)

Listed

Philippines (PICCS)

Listed

Switzerland (Giftliste 1)

Not Determined

Switzerland (Inventory of Notified Substances)

Not Determined

Taiwan (NCSR)

Not Determined

USA (TSCA)

Listed

16. OTHER INFORMATION**Related Product Codes**

SOPERB1000, SOPERB1001, SOPERB1002, SOPERB1003, SOPERB1004, SOPERB1005, SOPERB1006, SOPERB1007, SOPERB1008, SOPERB1009, SOPERB1010, SOPERB1011, SOPERB1012, SOPERB1013, SOPERB1014, SOPERB1015, SOPERB1016, SOPERB1020, SOPERB1500, SOPERB1800, SOPERB1801, SOPERB1802, SOPERB1803, SOPERB2000, SOPERB2001, SOPERB2002, SOPERB2003, SOPERB2100, SOPERB3000, SOPERB3100, SOPERB4000, SOPERB4001,

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SOPERB5000, SOPERB5001, SOPERB5100, SOPERB5200, SOPERB6000, SOPERB6001, SOPERB6100, SOPERB6500, SOPERB6600, SOPERB7000, SOPERB7200, SOPERB7500, SOPERB8000, SOPERB8001, SOPERB8500, SOPERB8501, SOPERB9000, SOPERB9500

Revision	5
Revision Date	10 Dec 2020
Reason for Issue	Updated SDS
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 Fahrenheit 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 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</p>

UN United Nations

wt Weight