



SAFETY DATA SHEET THIAMINE HYDROCHLORIDE REVISION 4, DATE 02 JAN 22

1. IDENTIFICATION

Product Name	Thiamine Hydrochloride
Other Names	Thiamine HCl; Vitamin B1 HCl
Uses	Active pharmaceutical ingredient, nutritional ingredient, feed additive.
Chemical Family	No Data Available
Chemical Formula	C ₁₂ H ₁₇ ClN ₄ OS.HCl
Chemical Name	Vitamin B1, hydrochloride
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	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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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
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Thiamine hydrochloride	C12H17CIN4OS.HCl	67-03-8	>98 - 100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth. Get immediate medical advice/attention if ingestion of a large amount does occur or 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 at least 15 minutes. If eye irritation persists, get medical advice/attention.
Skin	IF ON SKIN: Immediately flush skin with running water/shower. 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.
Advice to Doctor	Treat symptomatically.
Medical Conditions Aggravated by Exposure	No information available.

5. FIRE FIGHTING MEASURES

General Measures	Move containers from fire area if you can do it without risk. Cool containers with water spray until well after fire is out.
Flammability Conditions	Combustible material.

Extinguishing Media	Use dry chemical, Carbon dioxide (CO ₂), foam or water spray for extinction. Do not scatter spilled material with high-pressure water streams. *Use fire-extinguishing media appropriate for surrounding materials.
Fire and Explosion Hazard	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Hazardous Products of Combustion	Fire may produce irritating, corrosive and/or toxic gases, including Nitrogen oxides, Sulphur oxides, Hydrogen chloride gas.
Special Fire Fighting Instructions	Contain runoff from fire control water - Runoff may pollute waterways.
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. ELIMINATE all ignition sources (if dust clouds can occur). Do not touch or walk through spilled material. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Sweep or vacuum up spillage and collect in suitable containers for disposal (see SECTION 13). Avoid the generation of dusts during clean-up.
Containment	Stop leak if you can do it without risk. Prevent dust cloud. Cover powder spill with plastic sheet or tarp to minimize spreading.
Decontamination	Clean surface thoroughly to remove residual contamination.
Environmental Precautionary Measures	Prevent entry into waterways or sewers.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unnecessary personnel away.
Personal Precautionary Measures	Wear 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. Handle in accordance with good industrial hygiene and safety practice. Minimise dust generation and accumulation. Avoid breathing dusts or mists and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
Storage	Store in a cool, dry and well-ventilated place, protected from light. Keep container tightly closed. Keep away from heat and sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10).
Container	Keep in original (light-resistant) containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. 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).
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Exposure Limits	- New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m ³ ; TWA = 3 mg/m ³ (respirable dust). 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/respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses with sideshields. Face shields or goggles may be required if splash potential exists or if corrosive materials are present. - Hand protection: Handle with gloves. Recommended: Chemically compatible gloves, e.g. natural rubber (latex) or nitrile. For handling solutions, ensure that the glove material is protective against the solvent being used. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Lab coat. Where significant quantities are handled, work clothing (e.g. overalls, safety shoes) may be necessary.
Special Hazards Precautions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when 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. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Powder
Odour	Characteristic, nutty
Colour	White
pH	2.7 - 3.4 (1% aqueous sol.)
Vapour Pressure	<0.0000001 kPa (@ 25 °C)
Relative Vapour Density	11.7 Air = 1
Boiling Point	No Data Available
Melting Point	Decomposes
Freezing Point	No Data Available
Solubility	Insoluble in ether & benzene; Slightly soluble in alcohol - Freely soluble in water; Soluble in glycerol
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	248 °C
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	337.3 g/mol
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	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust 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	No information available.
Reactions That Release Gases or Vapours	Fire/decomposition may produce irritating, corrosive and/or toxic gases, including Nitrogen oxides, Sulphur oxides, Chlorine, Hydrogen chloride gas.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	No information available.
Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Avoid dust formation. Protect from exposure to light.
Materials to Avoid	Incompatible/reactive with alkalis, oxidising agents, reducing agents.
Hazardous Decomposition Products	Fire/decomposition may produce irritating, corrosive and/or toxic gases, including Nitrogen oxides, Sulphur oxides, Chlorine, Hydrogen chloride gas.
Hazardous Polymerisation	Hazardous polymerisation does not occur.

11. TOXICOLOGICAL INFORMATION

General Information	<ul style="list-style-type: none"> - Acute toxicity: Based on available data, the classification criteria are not met. - Skin corrosion/irritation: Not irritating. - Eye damage/irritation: May cause eye irritation. - Respiratory/skin sensitisation: Not sensitising. - Germ cell mutagenicity: Negative (S. typhimurium) [Ames assay]. - Carcinogenicity: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. - Reproductive toxicity: No reproduction toxicity was observed up to the highest dose level tested (1000 mg/kg) and no developmental toxicity was observed up to the highest dose level tested (1000 mg/kg). The substance does not require classification with respect to reproductive and developmental toxicity. - STOT (single exposure): Due to lack of data, the classification is not possible. - STOT (repeated exposure): No reproductive or developmental toxicity was observed up to the highest dose level tested (1000 mg/kg). The substance does not require classification with respect to repeated dose toxicity. - Aspiration toxicity: Based on available data, the classification criteria are not met.
Acute	
Ingestion	Acute toxicity (Oral): <ul style="list-style-type: none"> - LD50, Rat: 3,710 mg/kg [Supplier's SDS]. - LD50, Mouse: 8,824 mg/kg [Supplier's SDS].
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	No information available.
Persistence/Degradability	No information available.
Mobility	No information available.
Environmental Fate	Prevent entry into waterways or sewers.
Bioaccumulation Potential	No potential for bioaccumulation.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of waste product/container in accordance with all applicable local, regional and national regulations.
Special Precautions for Land Fill	No information available.

14. TRANSPORT INFORMATION**Land Transport (Australia)**

ADG Code

Proper Shipping Name	Vitamin B1 Hydrochloride
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	Vitamin B1 Hydrochloride
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	Vitamin B1 Hydrochloride
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	Vitamin B1 Hydrochloride
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	Vitamin B1 Hydrochloride
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	Vitamin B1 Hydrochloride
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 (AIC)**

Listed

Canada (DSL)

Listed

Canada (NDSL)

Not Listed

China (IECSC)

Listed

Europe (EINECS)

200-641-8

Europe (REACH)

01-2120773699-31-

Japan (ENCS/METI)

Listed

Korea (KECI)

KE-01482

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

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Related Product Codes

VITBAT1000, VITBAT1001, VITBAT1002, VITBAT1003, VITBAT1004, VITBAT1005, VITBAT1006, VITBAT1007, VITBAT1008, VITBAT1009, VITBAT1010, VITBAT1011, VITBAT1012, VITBAT1013, VITBAT1014, VITBAT1015, VITBAT1016, VITBAT1017, VITBAT1018, VITBAT1019, VITBAT1020, VITBAT1021, VITBAT1022, VITBAT1023, VITBAT1024, VITBAT1025, VITBAT2000, VITBAT2020, VITBAT2100, VITBAT2200, VITBAT2500, VITBAT3000, VITBAT3030, VITBAT4000, VITBAT4001, VITBAT4100, VITBAT4200, VITBAT4201, VITBAT4202, VITBAT4300, VITBAT4301, VITBAT4302, VITBAT4303, VITBAT4400, VITBAT4401, VITBAT4402, VITBAT4500, VITBAT9000, VITBAT9010, VITBAT9020

Revision

4

Revision Date

02 Jan 2022

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

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

SAFETY DATA SHEET THIAMINE HYDROCHLORIDE REVISION 4, DATE 02 JAN 22

ug/24H Micrograms per 24 Hours

UN United Nations

wt Weight