

1. IDENTIFICATION

Product Name	Zinc Dibutyldithiocarbamate
Other Names	Butyl zimate; Butyl ziram; ZDBC; Zinc bis(dibutyldithiocarbamate)
Uses	Rubber accelerator, vulcanizator, emulsion dispersant, adhesives.
Chemical Family	No Data Available
Chemical Formula	C ₁₈ H ₃₆ N ₂ S ₄ Zn
Chemical Name	Zinc, bis(dibutylcarbamo-dithioato-S,S'), (T-4)-
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)

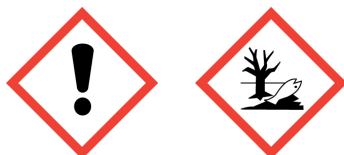
Not Scheduled

Globally Harmonised System

Hazard Classification Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard Categories Skin Corrosion/Irritation - Category 2
 Serious Eye Damage/Irritation - Category 2A
 Sensitisation (Skin) - Category 1
 Specific Target Organ Toxicity (Single Exposure) - Category 3
 Acute Hazard To The Aquatic Environment - Category 1
 Long-term Hazard To The Aquatic Environment - Category 1

Pictograms



Signal Word Warning

Hazard Statements

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Statements	Prevention	P271	Use only outdoors or in a well-ventilated area.
		P272	Contaminated work clothing should not be allowed out of the workplace.
		P280	Wear protective gloves/eye protection/face protection.
		P261	Avoid breathing dusts or mists.
		P273	Avoid release to the environment.
	Response	P302 + P352	IF ON SKIN: Wash with plenty of water.
		P304 + P340	IF INHALED: Remove victim to fresh air and keep comfortable for breathing.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P312	Call a POISON CENTER or doctor if you feel unwell.
		P333 + P313	If skin irritation or rash occurs: Get medical advice.
		P337 + P313	If eye irritation persists: Get medical advice.
		P391	Collect spillage.
	Storage	P362 + P364	Take off contaminated clothing and wash it before reuse.
		P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
	Disposal	P405	Store locked up.
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)

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Health Hazards 6.3A	Substances that are irritating to the skin
	6.4A	Substances that are irritating to the eye
	6.5B	Substances that are contact sensitisers
	Environmental Hazards 9.1A	Substances that are very ecotoxic in the aquatic environment

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Zinc bis(dibutyldithiocarbamate)	C ₁₈ H ₃₆ N ₂ S ₄ Zn	136-23-2	>97.5 - 100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth, then give water to drink. Do not induce vomiting unless directed to do so by medical personnel. 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: Remove and isolate contaminated clothing and shoes. Immediately flush skin with running water (and soap, if available) for at least 15 minutes. If skin irritation or rash 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. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
Advice to Doctor	In all cases of doubt, or when symptoms persist, seek medical 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	May cause an allergic skin reaction.

5. FIRE FIGHTING MEASURES

General Measures	Evacuate area. If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out. *Fight fire remotely due to the risk of explosion.
Flammability Conditions	Combustible solid; May burn but does not ignite readily.
Extinguishing Media	Use dry chemical, Carbon dioxide (CO ₂), foam or water spray for extinction - Do not use high volume water jets, as this will spread the fire.
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, toxic and/or corrosive gases, including carbon oxides (CO, CO ₂), sulfur dioxide, hydrogen cyanide (HCN), nitrous gases (NO _x).

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. *Do not attempt to take action without suitable protective equipment.
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. Clear spills immediately! Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Mechanically recover the product. Sweep or shovel spills into appropriate container for disposal (see SECTION 13). *Pick up and arrange disposal without creating dust. Don't use compressed air for cleaning surfaces or clothing.
Containment	Stop leak if you can do it without risk. Prevent dust cloud. Prevent entry into waterways, sewers, basements or confined areas.
Decontamination	Ventilate spillage area.
Environmental Precautionary Measures	Spillages and decontamination runoff should be prevented from entering drains and watercourses.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher ground.
Personal Precautionary Measures	Do not attempt to take action without suitable 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 - Use only outdoors or in a well-ventilated area. 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. Avoid release to the environment - Collect spillage (see SECTION 6).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Keep away from heat and sources of ignition - No smoking. Keep away from foodstuffs and incompatible materials (see SECTION 10). Store locked up.
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product. DNEL/DMELs for Workers: - Long-term, systemic effects (Dermal): 800 mg/kg bw/day. - Long-term, systemic effects (Inhalation): 6 mg/m ³
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	<ul style="list-style-type: none"> - 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 goggles). - Hand protection: Wear protective gloves. Recommended: Wear appropriate chemical resistant gloves. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Wear appropriate chemical resistant clothing.
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. Contaminated work clothing should not be allowed out of the workplace. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Powder, granules
Odour	Slight, inherent
Colour	White to off-white
pH	No Data Available
Vapour Pressure	Negligible at room temperatures (@ 20 °C)
Relative Vapour Density	No Data Available
Boiling Point	318 °C
Melting Point	100 - 112 °C
Freezing Point	No Data Available
Solubility	Practically insoluble in water (<1 mg/l) 20°C
Specific Gravity	1.48
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	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	Combustible solid; May burn but does not ignite readily.
Reactions That Release Gases or Vapours	Fire/decomposition may produce irritating, toxic and/or corrosive gases, including carbon oxides (CO, CO ₂), sulfur dioxide, hydrogen cyanide (HCN), nitrous gases (NO _x).
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	No hazardous reaction when handled and stored according to provisions. During the vulcanization process, traces of carcinogenic N-nitrosamines may be formed from decomposition products (amines) in the presence of nitrosating agents.
Chemical Stability	The substance is stable under normal storage and handling conditions.
Conditions to Avoid	Avoid generating dust. Keep away from heat and sources of ignition.
Materials to Avoid	Incompatible/reactive with strong oxidising agents, strong acid.
Hazardous Decomposition Products	Fire/decomposition may produce irritating, toxic and/or corrosive gases, including carbon oxides (CO, CO ₂), sulfur dioxide, hydrogen cyanide (HCN), nitrous gases (NO _x).
Hazardous Polymerisation	Under normal conditions, not hazardous reactions will occur.

11. TOXICOLOGICAL INFORMATION

General Information	<ul style="list-style-type: none"> - Acute toxicity: Expected to be a low ingestion hazard. - Skin corrosion/irritation: Causes skin irritation. May cause redness and pain. - Eye damage/irritation: Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling and blurred vision. - Respiratory/skin sensitisation: Not a respiratory sensitiser. May cause an allergic skin reaction. Dermatitis. Rash. - Germ cell mutagenicity: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. - Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA. - Reproductive toxicity: This product is not expected to cause reproductive or developmental effects. - STOT (single exposure): May cause respiratory irritation. - STOT (repeated exposure): No information available. - Aspiration toxicity: Not an aspiration hazard.
Acute	
Ingestion	Acute toxicity (Oral): - LD50, Rat: >5,000 mg/kg
Other	Acute toxicity (Dermal): - LD50, Rabbit: >2,000 mg/kg
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic toxicity: - LC50, Fish: 880 mg/l (96 h) [OECD 203]. - EC50, Daphnia: 0.74 mg/l (48 h) [OECD 202].
Persistence/Degradability	Not readily biodegradable.
Mobility	No information available.
Environmental Fate	Very toxic to aquatic life with long lasting effects - Avoid release to the environment.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	This material and its container must be disposed of as hazardous waste according to local/regional/national regulations.
Special Precautions for Land Fill	If empty container retains product residues, all label precautions must be observed.

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

ADG Code

Proper Shipping Name	Zinc Dibutyldithiocarbamate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	AU01
Comments	Not regulated as DG when transported by road or rail in packagings that do not incorporate a receptacle exceeding 500 kg(L) or IBCs.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc dibutyldithiocarbamate)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc dibutyldithiocarbamate)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc dibutyldithiocarbamate)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
ERG	171 Substances (Low to Moderate Hazard)
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available

Sea Transport

IMDG Code

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc dibutyldithiocarbamate)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available
EMS	F-A, S-F
Marine Pollutant	Yes

Air Transport

IATA DGR

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc dibutyldithiocarbamate)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

SAFETY DATA SHEET ZINC DIBUTYLDITHIOCARBAMATE REVISION 5, DATE 01 MAR 22

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 HSR002503
HSR003981 (Revoked)

National/Regional Inventories

Australia (AIC)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Determined
China (IECSC)	Listed
Europe (EINECS)	205-232-8
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Listed
Korea (KECI)	Listed
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 ZDBCAA1100, ZDBCAA1700, ZDBCAA1701, ZDBCAA1710, ZDBCAA2500, ZDBCAA3500

Revision 5

Revision Date 01 Mar 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 Heath 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