



**SAFETY DATA SHEET**  
**ZINC BIS(DIBENZYL DITHIOCARBAMATE)**  
**REVISION 3, DATE 10 NOV 18**

## 1. IDENTIFICATION

<b>Product Name</b>	<b>Zinc bis(dibenzyl dithiocarbamate)</b>
<b>Other Names</b>	Linkwell ZBEC
<b>Uses</b>	Used as a rubber accelerator.
<b>Chemical Family</b>	Organo-metallic
<b>Chemical Formula</b>	C <sub>30</sub> H <sub>28</sub> N <sub>2</sub> S <sub>4</sub> Zn
<b>Chemical Name</b>	Dibenzyl dithiocarbamic acid, zinc salt
<b>Product Description</b>	No Data Available

### Contact Details of the Supplier of this Safety Data Sheet

<b>Organisation</b>	<b>Location</b>	<b>Telephone</b>
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.*

<b>Organisation</b>	<b>Location</b>	<b>Telephone</b>
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** Acute Hazard To The Aquatic Environment - Category 1  
Long-term Hazard To The Aquatic Environment - Category 1

**Pictograms**

**Signal Word** Warning

**Hazard Statements** **H410** Very toxic to aquatic life with long lasting effects.

**Precautionary Statements**

Prevention	<b>P273</b>	Avoid release to the environment.
Response	<b>P391</b>	Collect spillage.
Disposal	<b>P501</b>	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
Zinc bis(dibenzylidithiocarbamate)	C <sub>30</sub> H <sub>28</sub> N <sub>2</sub> S <sub>4</sub> Zn	14726-36-4	100 %

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

**Swallowed** IF SWALLOWED: Rinse mouth, then drink plenty of water. Get medical advice/attention if you feel unwell.

**Eye** IF IN EYES: 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 10 - 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 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 until recovered. If respiratory symptoms persist, get medical advice/attention. Apply resuscitation if victim is not breathing; Administer oxygen if breathing is difficult.

**Advice to Doctor** Do not drink alcohol after exposure. Treat symptomatically and supportively. 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

<b>General Measures</b>	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
<b>Flammability Conditions</b>	Not readily combustible; May burn but does not ignite readily.
<b>Extinguishing Media</b>	Use dry chemical, Carbon dioxide (CO <sub>2</sub> ), foam or water spray for extinction - Do not use high volume water jet.
<b>Fire and Explosion Hazard</b>	Dust/air mixtures may ignite violently upon exposure to sparks or sources of ignition.
<b>Hazardous Products of Combustion</b>	Fire may produce irritating, toxic and/or corrosive fumes, including carbon oxides, nitrogen oxides, sulfur oxides, hydrogen cyanide, zinc oxide.
<b>Special Fire Fighting Instructions</b>	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
<b>Personal Protective Equipment</b>	Wear self-contained breathing apparatus (SCBA) in combination with normal firefighting clothing (full fire kit).
<b>Flash Point</b>	No Data Available
<b>Lower Explosion Limit</b>	No Data Available
<b>Upper Explosion Limit</b>	No Data Available
<b>Auto Ignition Temperature</b>	No Data Available
<b>Hazchem Code</b>	No Data Available

## 6. ACCIDENTAL RELEASE MEASURES

<b>General Response Procedure</b>	Ensure adequate ventilation. ELIMINATE all ignition sources. Do not touch or walk through spilled material. Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing.
<b>Clean Up Procedures</b>	Collect material (sweep or vacuum up) and place it in a suitable container for reuse or disposal (see SECTION 13).
<b>Containment</b>	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Prevent dust cloud.
<b>Decontamination</b>	No information available.
<b>Environmental Precautionary Measures</b>	Spillages and decontamination runoff should be prevented from entering drains and watercourses. Inform the relevant authorities if the product has caused environmental pollution.
<b>Evacuation Criteria</b>	Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher ground.
<b>Personal Precautionary Measures</b>	Use personal protective equipment as required (see SECTION 8).

## 7. HANDLING AND STORAGE

<b>Handling</b>	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. Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Keep away from heat and all sources of ignition - No smoking. Avoid release to the environment - Collect spillage (see SECTION 6).
<b>Storage</b>	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Keep away from heat and all sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10).
<b>Container</b>	Keep in the original container.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

<b>General</b>	No specific exposure standards are available for this product. For dusts from solid substances without specific occupational exposure standards: - Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m <sup>3</sup> (measured as inhalable dust). - New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m <sup>3</sup> ; TWA = 3 mg/m <sup>3</sup> (respirable dust).
<b>Exposure Limits</b>	No Data Available
<b>Biological Limits</b>	No information available.
<b>Engineering Measures</b>	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.
<b>Personal Protection Equipment</b>	- 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: Protective eyeglasses or chemical safety goggles. - Hand protection: Handle with gloves. Recommended: Protective gloves. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. No recommendation.
<b>Special Hazards Precautions</b>	No information available.
<b>Work Hygienic Practices</b>	Do not eat, drink or smoke when using this product. Wash hands before breaks and at the end of the workday. Take off contaminated clothing and wash before storage or reuse.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Solid
<b>Appearance</b>	Powder
<b>Odour</b>	No information available.
<b>Colour</b>	White
<b>pH</b>	No Data Available
<b>Vapour Pressure</b>	No Data Available
<b>Relative Vapour Density</b>	No Data Available
<b>Boiling Point</b>	330 °C (1013 hPa)
<b>Melting Point</b>	178 - 180 °C
<b>Freezing Point</b>	No Data Available
<b>Solubility</b>	1.06 mg/L 20°C
<b>Specific Gravity</b>	1.42
<b>Flash Point</b>	No Data Available
<b>Auto Ignition Temp</b>	No Data Available
<b>Evaporation Rate</b>	No Data Available
<b>Bulk Density</b>	No Data Available
<b>Corrosion Rate</b>	No Data Available
<b>Decomposition Temperature</b>	No Data Available
<b>Density</b>	1.42 g/cm <sup>3</sup>
<b>Specific Heat</b>	No Data Available
<b>Molecular Weight</b>	No Data Available
<b>Net Propellant Weight</b>	No Data Available
<b>Octanol Water Coefficient</b>	No Data Available
<b>Particle Size</b>	No Data Available
<b>Partition Coefficient</b>	No Data Available

<b>Saturated Vapour Concentration</b>	No Data Available
<b>Vapour Temperature</b>	No Data Available
<b>Viscosity</b>	No Data Available
<b>Volatile Percent</b>	No Data Available
<b>VOC Volume</b>	No Data Available
<b>Additional Characteristics</b>	No information available.
<b>Potential for Dust Explosion</b>	Dust/air mixtures may ignite violently upon exposure to sparks or sources of ignition.
<b>Fast or Intensely Burning Characteristics</b>	No information available.
<b>Flame Propagation or Burning Rate of Solid Materials</b>	No information available.
<b>Non-Flammables That Could Contribute Unusual Hazards to a Fire</b>	No information available.
<b>Properties That May Initiate or Contribute to Fire Intensity</b>	Not readily combustible; May burn but does not ignite readily.
<b>Reactions That Release Gases or Vapours</b>	Fire/decomposition may produce irritating, toxic and/or corrosive fumes, including carbon oxides, nitrogen oxides, sulfur oxides, hydrogen cyanide, zinc oxide.
<b>Release of Invisible Flammable Vapours and Gases</b>	No information available.

## 10. STABILITY AND REACTIVITY

<b>General Information</b>	No known hazardous reactions under normal conditions of use.
<b>Chemical Stability</b>	Stable under recommended storage and handling conditions.
<b>Conditions to Avoid</b>	Avoid dust formation. Keep away from heat and all sources of ignition.
<b>Materials to Avoid</b>	Incompatible/reactive with acids, oxidising agents.
<b>Hazardous Decomposition Products</b>	Fire/decomposition may produce irritating, toxic and/or corrosive fumes, including carbon oxides, nitrogen oxides, sulfur oxides, hydrogen cyanide, zinc oxide.
<b>Hazardous Polymerisation</b>	No information available.

## 11. TOXICOLOGICAL INFORMATION

<b>General Information</b>	Information on possible routes of exposure: <ul style="list-style-type: none"><li>- Ingestion: No adverse effects expected. May cause alcohol intolerance (Antabuse effect). May cause gastrointestinal irritation, headache, dizziness, nausea, vomiting.</li><li>- Eye contact: Causes (mild) eye irritation; Symptoms may include redness, swelling, pain and tearing.</li><li>- Skin contact: May be absorbed through the skin, producing effects similar to those caused by inhalation and/or ingestion.</li><li>- Inhalation: Exposure to dust particles generated from this material may cause irritation of the respiratory tract. May cause alcohol intolerance (Antabuse effect).</li></ul> Chronic effects: No information available.
<b>Carcinogen Category</b>	None

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	No information available.
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<b>Persistence/Degradability</b>	Not readily biodegradable.
<b>Mobility</b>	No information available.
<b>Environmental Fate</b>	Very toxic to aquatic life with long lasting effects - Avoid release to the environment.
<b>Bioaccumulation Potential</b>	No information available.
<b>Environmental Impact</b>	No Data Available

### 13. DISPOSAL CONSIDERATIONS

<b>General Information</b>	Recycle to process, if possible. Dispose of contents/container in accordance with local/regional/national regulations.
<b>Special Precautions for Land Fill</b>	No information available.

### 14. TRANSPORT INFORMATION

#### Land Transport (Australia)

ADG Code

<b>Proper Shipping Name</b>	Zinc bis(dibenzylidithiocarbamate)
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
<b>EPG</b>	47 Low To Moderate Hazard Substances
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	AU01
<b>Comments</b>	UN#3077: 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

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

#### Land Transport (New Zealand)

NZS5433

<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc bis(dibenzylidithiocarbamate))
<b>Class</b>	9 Miscellaneous Dangerous Goods and Articles
<b>Subsidiary Risk(s)</b>	No Data Available
<b>EPG</b>	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 bis(dibenzylidithiocarbamate))
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 bis(dibenzylidithiocarbamate))
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 bis(dibenzylidithiocarbamate))
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 &amp; 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**

# SAFETY DATA SHEET ZINC BIS(DIBENZYLDTITHIOCARBAMATE) REVISION 3, DATE 10 NOV 18

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 (AIIIC)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Determined
China (IECSC)	Listed
Europe (EINECS)	238-778-0
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Listed
Korea (KECI)	Listed
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)	Listed

## 16. OTHER INFORMATION

Related Product Codes	ZBECAA1700, ZBECAA1701
Revision	3
Revision Date	10 Nov 2018
Reason for Issue	Updated SDS
Key/Legend	< Less Than > Greater Than <b>AICS</b> Australian Inventory of Chemical Substances <b>atm</b> Atmosphere <b>CAS</b> Chemical Abstracts Service (Registry Number) <b>cm<sup>2</sup></b> Square Centimetres <b>CO<sub>2</sub></b> Carbon Dioxide <b>COD</b> 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/cm<sup>3</sup>** 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

**inH<sub>2</sub>O** Inch of Water

**K** Kelvin

**kg** Kilogram

**kg/m<sup>3</sup>** Kilograms per Cubic Metre

**lb** Pound

**LC<sub>50</sub>** LC stands for lethal concentration. LC<sub>50</sub> 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.

**LD<sub>50</sub>** LD stands for Lethal Dose. LD<sub>50</sub> 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

**m<sup>3</sup>** Cubic Metre

**mbar** Millibar

**mg** Milligram

**mg/24H** Milligrams per 24 Hours

**mg/kg** Milligrams per Kilogram

**mg/m<sup>3</sup>** Milligrams per Cubic Metre

**Misc or Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.

**mm** Millimetre

**mmH<sub>2</sub>O** 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