



# SAFETY DATA SHEET GLUCONODELTALACTONE REVISION 5, DATE 02 AUG 21

## 1. IDENTIFICATION

<b>Product Name</b>	<b>Gluconodeltalactone</b>
<b>Other Names</b>	Gluconic acid, lactone; Glucono-delta-lactone
<b>Uses</b>	Food additive; acidulant.
<b>Chemical Family</b>	No Data Available
<b>Chemical Formula</b>	C <sub>6</sub> H <sub>10</sub> O <sub>6</sub>
<b>Chemical Name</b>	D-Gluconic acid, .delta.-lactone
<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

<b>Hazard Classification</b>	NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
<b>Signal Word</b>	None

## National Transport Commission (Australia)

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

<b>Dangerous Goods Classification</b>	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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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

## Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Gluconodeltalactone	C6H10O6	90-80-2	<=100 %

## 4. FIRST AID MEASURES

## Description of necessary measures according to routes of exposure

<b>Swallowed</b>	IF SWALLOWED: Rinse mouth, then drink plenty of water. Do not induce vomiting. Get immediate medical advice/attention if you feel unwell.
<b>Eye</b>	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.
<b>Skin</b>	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.
<b>Inhaled</b>	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. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
<b>Advice to Doctor</b>	Treat symptomatically.
<b>Medical Conditions Aggravated by Exposure</b>	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>	Combustible material; May burn but does not ignite readily.
<b>Extinguishing Media</b>	Use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction. Do not scatter spilled material with high-pressure water streams.
<b>Fire and Explosion Hazard</b>	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. Irritating and highly toxic gases may be generated by thermal decomposition or combustion, including Carbon oxides.

**Hazardous Products of Combustion**

<b>Special Fire Fighting Instructions</b>	Contain runoff from fire control or dilution water - Runoff may cause pollution.
<b>Personal Protective Equipment</b>	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
<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>	400 °C
<b>Hazchem Code</b>	No Data Available

**6. ACCIDENTAL RELEASE MEASURES**

<b>General Response Procedure</b>	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.
<b>Clean Up Procedures</b>	Vacuum or sweep up material and place into a suitable disposal container (see SECTION 13).
<b>Containment</b>	Stop leak if you can do it without risk. Prevent dust cloud.
<b>Decontamination</b>	Flush remainder with copious amounts of water.
<b>Environmental Precautionary Measures</b>	Prevent entry into drains and waterways.
<b>Evacuation Criteria</b>	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
<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. Minimise dust generation and accumulation. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). WARNING: May form combustible dust concentrations in air! 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.
<b>Storage</b>	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed when not in use. Protect from moisture/humidity. Keep away from heat and sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10).
<b>Container</b>	Keep in the original container; paper, plastic or poly-lined bags or drums.

**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>	<ul style="list-style-type: none"><li>- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Dust mask/particulate respirator (refer to AS/NZS 1715 &amp; 1716).</li><li>- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses or goggles.</li><li>- Hand protection: Handle with gloves. Recommended: Protective gloves.</li><li>- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes.</li></ul>
<b>Special Hazards Precautions</b>	No information available.
<b>Work Hygienic Practices</b>	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

<b>Physical State</b>	Solid
<b>Appearance</b>	Granular powder
<b>Odour</b>	Odourless
<b>Colour</b>	White to off-white
<b>pH</b>	4 - 2.6 (after 2 hours) (1% aqueous soln.)
<b>Vapour Pressure</b>	No Data Available
<b>Relative Vapour Density</b>	No Data Available
<b>Boiling Point</b>	No Data Available
<b>Melting Point</b>	151 - 155 °C
<b>Freezing Point</b>	No Data Available
<b>Solubility</b>	Soluble in water (59 g/100 mL)
<b>Specific Gravity</b>	1.3 g/cm <sup>3</sup>
<b>Flash Point</b>	No Data Available
<b>Auto Ignition Temp</b>	400 °C
<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>	153 °C
<b>Density</b>	No Data Available
<b>Specific Heat</b>	No Data Available
<b>Molecular Weight</b>	178.14
<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>	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.

<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>	Combustible material; May burn but does not ignite readily.
<b>Reactions That Release Gases or Vapours</b>	Irritating and highly toxic gases may be generated by thermal decomposition or combustion, including Carbon oxides.
<b>Release of Invisible Flammable Vapours and Gases</b>	No information available.

## 10. STABILITY AND REACTIVITY

<b>General Information</b>	Hazardous reactions will not occur under normal conditions.
<b>Chemical Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Avoid generating dust. Keep away from heat and sources of ignition. Avoid exposure to moisture/humidity.
<b>Materials to Avoid</b>	Incompatible/reactive with strong oxidising agents, strong bases.
<b>Hazardous Decomposition Products</b>	Irritating and highly toxic gases may be generated by thermal decomposition or combustion, including Carbon oxides.
<b>Hazardous Polymerisation</b>	Has not been reported.

## 11. TOXICOLOGICAL INFORMATION

<b>General Information</b>	<p>Information on possible routes of exposure:</p> <ul style="list-style-type: none"> <li>- Ingestion: May cause gastrointestinal irritation if large amounts are swallowed. May cause stomach pain, nausea, vomiting and diarrhoea.</li> <li>- Eye contact: May cause mild irritation. Eyes may water profusely.</li> <li>- Skin contact: May cause irritation and redness for susceptible individuals.</li> <li>- Inhalation: May cause respiratory irritation in susceptible individuals. May cause shortness of breath, sneezing and coughing.</li> </ul> <p>Chronic effects: Long-term inhalation of excessive dust may cause delayed lung injury. Not a carcinogen (IARC, ACGIH, NTP, OSHA).</p>
<b>Carcinogen Category</b>	None

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	<p>Aquatic toxicity:</p> <ul style="list-style-type: none"> <li>- LC50, Fish: &gt;1,000 mg/L (96 h) (Chronic Value: &gt;100 mg/L) [Supplier's SDS].</li> <li>- EC50, Daphnids: &gt;1,000 mg/L (48 h) (Chronic Value: &gt;100 mg/L) [Supplier's SDS].</li> <li>- EC50, Green algae: &gt;1,000 mg/L (96 h) (Chronic Value: &gt;100 mg/L) [Supplier's SDS].</li> </ul> <p>*ChV = Chronic value</p>
<b>Persistence/Degradability</b>	Readily and rapidly biodegradable.
<b>Mobility</b>	Accidental spillage may lead to penetration in the soil and groundwater, however; there is no evidence that this would cause adverse ecological effects.
<b>Environmental Fate</b>	Not expected to cause significant environmental impact.

Bioaccumulation Potential	Product does not bioaccumulate.
Environmental Impact	No Data Available

**13. DISPOSAL CONSIDERATIONS**

General Information	Dispose of contents/container in accordance with local/regional/national regulations.
Special Precautions for Land Fill	Where practical, containers and packaging should be recycled by a licensed contractor.

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

ADG Code

Proper Shipping Name	Gluconodeltalactone
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 GOOD: Not regulated for LAND transport.

**Land Transport (Malaysia)**

ADR Code

Proper Shipping Name	Gluconodeltalactone
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 GOOD: Not regulated for LAND transport.

**Land Transport (New Zealand)**

NZS5433

Proper Shipping Name	Gluconodeltalactone
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 GOOD: Not regulated for LAND transport.

**Land Transport (United States of America)**

US DOT

Proper Shipping Name	Gluconodeltalactone
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 GOOD: Not regulated for LAND transport.

**Sea Transport**

IMDG Code

Proper Shipping Name	Gluconodeltalactone
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 GOOD: Not regulated for SEA transport.

**Air Transport**

IATA DGR

Proper Shipping Name	Gluconodeltalactone
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 GOOD: Not regulated for AIR transport.

**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**

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
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**National/Regional Inventories**

Australia (AIC)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Determined
China (IECSC)	Listed
Europe (EINECS)	202-016-5
Europe (REACH)	Not Determined
Japan (ENCS/METI)	8-524
Korea (KECI)	KE-17682
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)	Not Determined

**16. OTHER INFORMATION**

Related Product Codes	GLUCON1000, GLUCON1001, GLUCON1002, GLUCON1003, GLUCON1004, GLUCON1005, GLUCON1006, GLUCON1007, GLUCON1008, GLUCON1009, GLUCON1100, GLUCON1200, GLUCON2000, GLUCON2500, GLUCON2600, GLUCON3000, GLUCON3500, GLUCON3900, GLUCON3910, GLUCON3950, GLUCON4000, GLUCON4100, GLUCON4198, GLUCON4200, GLUCON4201, GLUCON5000, GLUCON5100, GLUCON5200
Revision	5
Revision Date	02 Aug 2021
Key/Legend	< Less Than > Greater Than <b>AICS</b> Australian Inventory of Chemical Substances



**atm** Atmosphere  
**CAS** Chemical Abstracts Service (Registry Number)  
**cm<sup>2</sup>** Square Centimetres  
**CO<sub>2</sub>** 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/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 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