



**SAFETY DATA SHEET**  
**D-GLUCOSAMINE SULFATE POTASSIUM CHLORIDE**  
**REVISION 3, DATE 06 JUN 19**

## 1. IDENTIFICATION

<b>Product Name</b>	<b>D-Glucosamine Sulfate Potassium Chloride</b>
<b>Other Names</b>	2-Amino-2-deoxy-β-D-Glucan-Sulphate Salt-Potassium Salt; D-Glucosamine sulfate potassium (2KCl); D-Glucosamine sulfate, 2KCl
<b>Uses</b>	Food additive and raw material for pharmacy.
<b>Chemical Family</b>	No Data Available
<b>Chemical Formula</b>	(C <sub>6</sub> H <sub>14</sub> N <sub>05</sub> ) <sub>2</sub> SO <sub>4</sub> .2KCl
<b>Chemical Name</b>	D-Glucosamine sulfate, potassium chloride salt
<b>Product Description</b>	Chitin extracted from recycled crab and shrimp shells.

### 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

Redox Ltd  
Corporate Office Sydney  
Locked Bag 15 Minto NSW 2566 Australia  
2 Swettenham Road Minto NSW 2566 Australia  
All Deliveries: 4 Holmes Road Minto NSW 2566 Australia

Phone +61 2 9733 3000  
Fax +61 2 9733 3111  
E-mail [sydney@redox.com](mailto:sydney@redox.com)  
Web [www.redox.com](http://www.redox.com)  
ABN 92 000 762 345

Australia  
Adelaide  
Brisbane  
Melbourne  
Perth  
Sydney

New Zealand  
Auckland  
Christchurch  
Hawke's Bay  
UK  
London

Malaysia  
Kuala Lumpur  
USA  
Los Angeles  
Oakland  
Mexico  
Saltillo



## 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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## Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

<b>Hazard Classification</b>	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
D-Glucosamine sulfate, potassium chloride salt	(C6H14NO5)2SO4.2KCl	38899-05-7	<=100 %

## 4. FIRST AID MEASURES

## Description of necessary measures according to routes of exposure

<b>Swallowed</b>	IF SWALLOWED: Rinse mouth. Get medical advice/attention if you feel unwell. Do not induce vomiting unless directed to do so by medical personnel.
<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 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.
<b>Advice to Doctor</b>	Treat symptomatically.
<b>Medical Conditions Aggravated by Exposure</b>	May aggravate preexisting respiratory conditions or allergies.

## 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. Combustible solid; May burn but does not ignite readily.
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**Flammability Conditions****Extinguishing Media**

Use dry chemical, Carbon dioxide (CO<sub>2</sub>), foam or water spray for extinction.

**Fire and Explosion Hazard**

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 fumes, including Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Hydrogen sulfide.

**Special Fire Fighting Instructions**

Contain runoff from fire control or dilution water - Runoff may pollute waterways.

**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 generating dust. Avoid breathing dust and contact with eyes, skin and clothing.

**Clean Up Procedures**

Collect material (vacuum up) and place into suitable containers for recovery or disposal (see SECTION 13). Avoid dispersal of dust in the air (i.e. clearing dusty surfaces with compressed air). Non-sparking tools should be used.

**Containment**

Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Prevent dust cloud.

**Decontamination**

Wash the spillage site with large amounts of water.

**Environmental Precautionary Measures**

Prevent entry into drains and waterways.

**Evacuation Criteria**

Spill or leak area should be isolated immediately. Keep unauthorised personnel away.

**Personal Precautionary Measures**

Use personal protective equipment 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. 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). Combustible dust: 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, out of direct sunlight. Keep container tightly closed. Protect from moisture/humidity. Keep away from heat and sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10).

**Container**

Keep in the original container.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION****General**

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: Wear respiratory protection in case of inadequate ventilation or when dust is airborne. Recommended: Dust mask/particulate filter respirator (refer to AS/NZS 1715 &amp; 1716).</li> <li>- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses; Goggles, when there is a high level of airborne dust.</li> <li>- Hand protection: Handle with gloves. Recommended: Protective gloves.</li> <li>- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. No recommendation.</li> </ul>
<b>Special Hazards Precautions</b>	Dust Deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.
<b>Work Hygienic Practices</b>	Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash before reuse. 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>	Free-flowing, crystalline powder
<b>Odour</b>	Odourless
<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>	No Data Available
<b>Melting Point</b>	No Data Available
<b>Freezing Point</b>	No Data Available
<b>Solubility</b>	Soluble in water - Insoluble in alcohols
<b>Specific Gravity</b>	No Data Available
<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>	0.85 ~ 0.95 g/cm <sup>3</sup>
<b>Corrosion Rate</b>	No Data Available
<b>Decomposition Temperature</b>	No Data Available
<b>Density</b>	No Data Available
<b>Specific Heat</b>	No Data Available
<b>Molecular Weight</b>	605.52
<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>	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 solid; 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 (NOx), Hydrogen sulfide.
<b>Release of Invisible Flammable Vapours and Gases</b>	No information available.

## 10. STABILITY AND REACTIVITY

<b>General Information</b>	No information available.
<b>Chemical Stability</b>	Stable under recommended storage conditions.
<b>Conditions to Avoid</b>	Avoid generating dust. Keep away from heat and sources of ignition.
<b>Materials to Avoid</b>	Incompatible/reactive with oxidising agents, strong acids.
<b>Hazardous Decomposition Products</b>	Fire/decomposition may produce irritating, toxic and/or corrosive fumes, including Carbon oxides, Nitrogen oxides (NOx), Hydrogen sulfide.
<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: Not likely to be hazardous if ingested. It can start to dissolve, forming a film on mucous membranes.</li><li>- Eye contact: Powder may cause mechanical irritation. It can start to dissolve, causing film formation and blurred vision.</li><li>- Skin contact: The powder can cause irritation or rash.</li><li>- Inhalation: It may accumulate on linings of the nose and lungs resulting in dryness and coughing.</li></ul> Chronic effects: There is no known effect from chronic exposure to this product. Not listed by ACGIH, IARC, NIOSH, NTP or OSHA.
<b>Acute</b>	
<b>Ingestion</b>	Acute toxicity (Oral): <ul style="list-style-type: none"><li>- LD50, Mice: &gt;15 g/kg</li></ul>
<b>Carcinogen Category</b>	None

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	Negligible ecotoxicity.
<b>Persistence/Degradability</b>	The material is biodegradable.
<b>Mobility</b>	No information available.
<b>Environmental Fate</b>	Prevent entry into drains and waterways.

Bioaccumulation Potential	No bioaccumulation potential.
Environmental Impact	No Data Available

### 13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container via a specialised disposal company and in accordance with local/regional/national regulations.
Special Precautions for Land Fill	No information available.

### 14. TRANSPORT INFORMATION

#### Land Transport (Australia)

ADG Code

Proper Shipping Name	D-Glucosamine sulfate, Potassium chloride
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	D-Glucosamine sulfate, Potassium chloride
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

Proper Shipping Name	D-Glucosamine sulfate, Potassium chloride
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available

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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	D-Glucosamine sulfate, Potassium chloride
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.

## Sea Transport

IMDG Code

Proper Shipping Name	D-Glucosamine sulfate, Potassium chloride
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	D-Glucosamine sulfate, Potassium chloride
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)
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**15. REGULATORY INFORMATION**

<b>General Information</b>	No Data Available
<b>Poisons Schedule (Aust)</b>	Not Scheduled

**Environmental Protection Authority (New Zealand)**

Hazardous Substances and New Organisms Amendment Act 2015

<b>Approval Code</b>	Not Hazardous
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**National/Regional Inventories**

<b>Australia (AIC)</b>	Not Listed
<b>Canada (DSL)</b>	Not Determined
<b>Canada (NDSL)</b>	Not Determined
<b>China (IECSC)</b>	Not Determined
<b>Europe (EINECS)</b>	Not Determined
<b>Europe (REACH)</b>	Not Determined
<b>Japan (ENCS/METI)</b>	Not Determined
<b>Korea (KECI)</b>	Not Determined
<b>Malaysia (EHS Register)</b>	Not Determined
<b>New Zealand (NZIoC)</b>	Listed
<b>Philippines (PICCS)</b>	Not Determined
<b>Switzerland (Giftliste 1)</b>	Not Determined
<b>Switzerland (Inventory of Notified Substances)</b>	Not Determined
<b>Taiwan (NCSR)</b>	Not Determined
<b>USA (TSCA)</b>	Not Determined

**16. OTHER INFORMATION**

<b>Related Product Codes</b>	GLSULP1000, GLSULP1001, GLSULP1002, GLSULP1003, GLSULP1004, GLSULP1005, GLSULP1006, GLSULP1007, GLSULP2000, GLSULP2001, GLSULP2500, GLSULP2700, GLSULP2800, GLSULP2900, GLSULP3000, GLSULP3001, GLSULP3002, GLSULP3003, GLSULP3004, GLSULP3005, GLSULP3006, GLSULP3100, GLSULP3101, GLSULP3500, GLSULP4000, GLSULP5000, GLSULP6000, GLSULP6100, GLSULP7000, GLSULP7300, GLSULP7500, GLSULP7700, GLSULP8000, GLSULP8001, GLSULP8002, GLSULP8100, GLSULP8200, GLSULP8300, GLSULP8400, GLSULP8500, GLSULP9010, GLSULP9070
<b>Revision</b>	3
<b>Revision Date</b>	06 Jun 2019
	< Less Than



## Key/Legend

> Greater Than  
**AICS** 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