

1. IDENTIFICATION

Product Name Chlorhexidine Digluconate Solution

Other Names Chlorhexidine gluconate, >10 - 24% in a non-hazardous diluent

Uses Antiseptic, disinfectant; Formulation of cosmetic products, perfumes, pharmaceutical products, washing, cleaning and

personal hygiene products, medical devices.

Chemical Family No Data Available
Chemical Formula Unspecified

Chemical Name D-Gluconic acid, compound with N,N"-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimidamide (2:1)

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) Schedule 7



Globally Harmonised System

Hazard Classification Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of

Chemicals (GHS)

Hazard Categories Serious Eye Damage/Irritation - Category 1

Long-term Hazard To The Aquatic Environment - Category 1
Acute Hazard To The Aquatic Environment - Category 1

Pictograms





Signal Word Danger

Hazard Statements H318 Causes serious eye damage.

P310

H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements Prevention P280 Wear eye protection/face protection.

P273 Avoid release to the environment.

Response P305 + P351 + P338 + IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses,

if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor.

P391 Collect spillage.

Disposal 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 6.1E Substances that are acutely toxic –May be harmful, Aspiration hazard

6.3A Substances that are irritating to the skin6.4A Substances that are irritating to the eye

Environmental **9.1B** Substances that are ecotoxic in the aquatic environment

Hazards

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Water	H20	7732-18-5	79 - 81 % (w/v)

Chlorhexidine digluconate Unspecified 18472-51-0 19 - 21 % (w/v)

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed IF SWALLOWED: Rinse mouth, then drink plenty of water. Do not induce vomiting. Get medical advice/attention. Never

give anything by mouth to an unconscious or convulsing person.

IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting Eve

the upper and lower lids. Immediately call a Poison Centre or doctor/physician for advice. Remove contact lenses if

present and easy to do. Continue rinsing for at least 15 minutes. Obtain immediate medical attention!

Skin IF ON SKIN: Immediately flush skin with running water while removing contaminated clothing and shoes. Continue to

wash skin with plenty of soap and water for at least 15 minutes. If skin irritation 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. If respiratory symptoms

persist, get medical advice/attention. Apply resuscitation if victim is not breathing. Administer oxygen if breathing is

difficult.

Advice to Doctor Symptomatic treatment and supportive therapy, as indicated. Ensure that medical personnel are aware of the material(s)

involved and take precautions to protect themselves. Show this material safety data sheet to the doctor in attendance.

Medical Conditions Aggravated by No information available.

Exposure

5. FIRE FIGHTING MEASURES

General Measures If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.

Suppress (knock down) gases/vapors/mists with a water spray jet. Dike fire control water for later disposal.

Flammability Conditions The substance is produced, handled and marketed as aqueous solution, which prevents flammability.

*This product does not sustain combustion [per DOT 49CFR 173 Appendix H method].

Use dry chemical, Carbon dioxide (CO2), water spray or foam for extinction. Use extinguishing measures that are **Extinguishing Media**

appropriate to local circumstances and the surrounding environment.

*Alcohol resistant foam is the preferred firefighting medium but, if it is not available, normal foam can be used.

Fire and Explosion Hazard Containers may explode when heated.

*Not combustible. Ambient fire may liberate hazardous vapours.

Hazardous Products of

Combustion or thermal decomposition will evolve toxic and irritant vapours, including Carbon oxides, Nitrogen oxides

Combustion **Special Fire Fighting Instructions**

(NOx), Hydrogen chloride gas. Contain runoff from fire control or dilution water - Runoff may pollute waterways.

Personal Protective Equipment

A positive pressure self-contained breathing apparatus (SCBA) and suitable protective clothing should be worn in fire

conditions.

No Data Available Flash Point No Data Available **Lower Explosion Limit Upper Explosion Limit** No Data Available No Data Available **Auto Ignition Temperature**

Hazchem Code •37

6. ACCIDENTAL RELEASE MEASURES

Ensure adequate ventilation. ELIMINATE all ignition sources (no smoking, flares, sparks or flames). Do not touch or walk **General Response Procedure**

through spilled material. Avoid breathing mist/vapours and contact with eyes, skin and clothing.

Clean Up Procedures Absorb with earth, sand or other non-combustible material. Transfer to a container for disposal or recovery (see SECTION

13).

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

Decontamination Ventilate area and wash spill site after material pick up is complete.

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.

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. Avoid splashes. Avoid breathing mist/vapours/spray and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment

as required (see SECTION 8). Avoid release to the environment - Collect spillage (see SECTION 6).

Storage Store in a cool, dry and well-ventilated place, out of direct sunlight (light sensitive). Keep container tightly closed.

Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep away from heat and

sources of ignition - No smoking. Do not freeze. Keep away from incompatible material (see SECTION 10).

*This product should be stored at a temperature not greater than: 25 °C.

Container Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Contains no substances with occupational exposure limit values.

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 - Respiratory protection: In case of inadequate ventilation, wear respiratory protection; required when vapours/aerosols

are generated Recommended: For nuisance exposures, use type OV/AG (US) or type ABEK respirator cartridges. Use respirators and components tested and approved under appropriate government standards (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Complete eye protection.

Tightly fitting safety goggles or Safety spectacles and face shield. Use equipment for eye protection tested and approved

under appropriate government standards.

- Hand protection: Handle with gloves. Recommended: Wear suitable gloves, e.g. Nitrile rubber (0.1 mm).

- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the hazardous

substance(s) at the specific workplace.

*Consideration should be given to the work procedures involved and the potential extent of exposure as they may

determine whether a higher level of protection is required.

Special Hazards Precaustions No information available.

Work Hygienic Practices When using do not eat, drink or smoke. Wash hands and exposed skin after use. Contaminated clothing should be

thoroughly cleaned.

*Contact lenses may represent a special hazard. Have available eyewash bottle with clean water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Liquid

Appearance Liquid
Odour Odourless
Colour Clear

рΗ No Data Available **Vapour Pressure** No Data Available **Relative Vapour Density** No Data Available **Boiling Point** No Data Available **Melting Point** No Data Available **Freezing Point** No Data Available Solubility Soluble in water **Specific Gravity** 1.06 - 1.07

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 No Data Available Density **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 <4

Saturated Vapour ConcentrationNo Data AvailableVapour TemperatureNo Data AvailableViscosityNo Data AvailableVolatile PercentNo Data AvailableVOC VolumeNo Data Available

Additional Characteristics Solubility (other): 21 g/L in ethanol; 35 g/L in isopropanol; 44 g/L in acetone [Chlorhexidine digluconate].

Potential for Dust Explosion Not applicable.

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

No information available.

Properties That May Initiate or Contribute to Fire Intensity

Not combustible. Ambient fire may liberate hazardous vapours. The substance is produced, handled and marketed as aqueous solution, which prevents flammability.

*This product does not sustain combustion [per DOT 49CFR 173 Appendix H method].

Reactions That Release Gases or

Vapours

Combustion or thermal decomposition will evolve toxic and irritant vapours, including Carbon oxides, Nitrogen oxides (NOx), Hydrogen chloride gas.

Release of Invisible Flammable

Vapours and Gases

No information available.

10. STABILITY AND REACTIVITY

General Information Due to the cationic character of Chlorhexidine salts, they are chemically incompatible with anionic compounds.

Chemical Stability Stable under normal conditions.

Conditions to Avoid Keep away from heat, sources of ignition and direct sunlight. Do not freeze.

Materials to Avoid Incompatible/reactive with strong acids, strong bases and oxidising agents. Chemically incompatible with anionic

compounds; Keep away from sulfates, borates, bicarbonates, chlorides, etc.

Hazardous Decomposition

Products

Combustion or thermal decomposition will evolve toxic and irritant vapours, including Carbon oxides, Nitrogen oxides

(NOx), Hydrogen chloride gas.

Hazardous Polymerisation No information available.

11. TOXICOLOGICAL INFORMATION

General Information

- Acute toxicity: May be harmful if swallowed; Ingestion is likely to result in irritation of the gastrointestinal tract. May be harmful if inhaled. Not expected to cause systemic harmful effects after skin contact.
- Skin corrosion/irritation: This material showed low primary skin irritation potential to rabbit skin. It is not expected to cause significant or prolonged irritation by skin contact. Repeated exposure may cause dermal disturbances.
- Eye damage/irritation: Causes serious eye damage. Severe irritant to the eye. This material is considered to represent risk of serious damage to eyes.
- Respiratory/skin sensitisation: This material is not considered a skin sensitiser. Some rare cases of allergic reactions have been reported. Several cases of sensitisation have been reported in humans; However, the majority of positive reactions were in individuals with pre-existing skin disorders or when applied to a mucous membrane (Chlorhexidine digluconate).
- Germ cell mutagenicity: There is no evidence of mutagenic potential.
- Carcinogenicity: There is no evidence that this product represents a carcinogenic risk under normal conditions of handling

and use. No ingredient 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 evidence of reproductive toxicity or teratogenic potential.
- STOT (single exposure): May cause irritation to the respiratory system (mucosal irritations).
- STOT (repeated exposure): None known.
- Aspiration toxicity: None known.

Acute

Ingestion Acute toxicity (Oral):

- LD50, Rat: >2,000 mg/kg

Other Acute toxicity (Dermal):

- LD50, Rabbit: >2,000 mg/kg

Carcinogen Category None

12. ECOLOGICAL INFORMATION

Ecotoxicity Aquatic toxicity:

- LC50, Fish (Danio rerio): 2.08 mg/L (96 h) [as pure Chlorhexidine digluconate; OECD Test Guideline 203].

- EC50, Crustacea (Daphnia magna): 0.087 mg/L (48 h) [as pure Chlorhexidine digluconate; OECD Test Guideline 202]. - ErC50, Algae (Desmodesmus subspicatus): 0.081 mg/L (72 h) [as pure Chlorhexidine digluconate; OECD Test Guideline

201].

M-factor (acute) = 10 M-factor (chronic) = 1

Persistence/Degradability Not readily biodegradable.

Mobility LogKoc: >3.9 (Chlorhexidine digluconate).

Environmental Fate Very toxic to aquatic life wit long lasting effects - Avoid release to the environment.

Bioconcentration factor (BCF): 42 L/kg (Chlorhexidine digluconate).

Environmental Impact No Data Available

13. DISPOSAL CONSIDERATIONS

General Information Dispose of contents/container in accordance with local/regional/national regulations. Bury on an authorised landfill site or

incinerate under approved controlled conditions, using incinerators suitable for the disposal of noxious chemical waste.

Special Precautions for Land Fill No mixing with other waste. Handle uncleaned containers like the product.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name Chlorhexidine Digluconate Solution

Class No Data Available
Subsidiary Risk(s) No Data Available

EPG 47 Low To Moderate Hazard Substances

UN Number No Data Available

Hazchem •3Z

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, LIQUID, N.O.S. (Chlorhexidine digluconate solution)

Class 9 Miscellaneous Dangerous Goods and Articles

Subsidiary Risk(s) No Data Available

EPG 47 Low To Moderate Hazard Substances

 UN Number
 3082

 Hazchem
 3Z

 Pack Group
 III

Special Provision No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Chlorhexidine digluconate solution)

Class 9 Miscellaneous Dangerous Goods and Articles

Subsidiary Risk(s) No Data Available

EPG 47 Low To Moderate Hazard Substances

 UN Number
 3082

 Hazchem
 3Z

 Pack Group
 III

Special Provision No Data Available

Land Transport (Philippines)

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Chlorhexidine digluconate solution)

Class 9 Miscellaneous Dangerous Goods and Articles

Subsidiary Risk(s) No Data Available

EPG 47 Low To Moderate Hazard Substances

 UN Number
 3082

 Hazchem
 3Z

 Pack Group
 III

Special Provision No Data Available

Land Transport (Spain)

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Chlorhexidine digluconate solution)

Class 9 Miscellaneous Dangerous Goods and Articles

Subsidiary Risk(s) No Data Available

EPG 47 Low To Moderate Hazard Substances

 UN Number
 3082

 Hazchem
 3Z

 Pack Group
 III

Special Provision No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Chlorhexidine digluconate solution)

Class 9 Miscellaneous Dangerous Goods and Articles

Subsidiary Risk(s) No Data Available

ERG 171 Substances (Low to Moderate Hazard)

 UN Number
 3082

 Hazchem
 3Z

 Pack Group
 III

Special Provision No Data Available

Sea Transport

IMDG Code

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Chlorhexidine digluconate solution)

Class 9 Miscellaneous Dangerous Goods and Articles

Subsidiary Risk(s) No Data Available

 UN Number
 3082

 Hazchem
 3Z

 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, LIQUID, N.O.S. (Chlorhexidine digluconate solution)

Class 9 Miscellaneous Dangerous Goods and Articles

Subsidiary Risk(s) No Data Available

 UN Number
 3082

 Hazchem
 3Z

 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)

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 CHLORHEXIDINE
Poisons Schedule (Aust) Schedule 7

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code HSR007118

National/Regional Inventories

Australia (AIIC) Listed

Canada (DSL) Not Determined

Canada (NDSL) Not Determined

China (IECSC) Not Determined

Europe (EINECS) 242-354-0

Europe (REACh) Not Determined

Japan (ENCS/METI) Not Determined

Korea (KECI) Not Determined

Malaysia (EHS Register) Not Determined

New Zealand (NZIoC) Listed

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 CHLDIS1000, CHLDIS1001, CHLDIS1002, CHLDIS1003, CHLDIS1004, CHLDIS1005, CHLDIS1006, CHLDIS1007,

CHLDIS1500, CHLDIS2000, CHLDIS2500, CHLDIS3000, CHLDIS3400, CHLDIS3500, CHLDIS3501, CHLDIS3510, CHLDIS3515, CHLDIS3600, CHLDIS3900, CHLDIS3910, CHLDIS3915, CHLDIS4000, CHLDIS4500, CHLDIS4501, CHLDIS4502, CHLDIS4505, CHLDIS4510, CHLDIS4516, CHLDIS4550, CHLDIS4600, CHLDIS4610, CHLDIS5000, CHLDIS6000, CHLDIS6100, CHLDIS6000, CHLDIS

Revision

AICS Australian Inventory of Chemical Substances

atm Atmosphere

CAS Chemical Abstracts Service (Registry Number)

cm² Square CentimetresCO2 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/I 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

Ib 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.

Itr 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