

SAFETY DATA SHEET

CHLORHEXIDINE 10 % SOLUTION

1. MATERIAL AND SUPPLY COMPANY IDENTIFICATION

Product Name:	Chlorhexidine 10% Solution
Product Codes:	DL5210 - 200mL Amber Glass Poisons Bottle
Recommended Use:	For cleaning of endodontic files as part of established protocols.
Contact Information:	Dentalife Australia Pty. Ltd. Factory 9/505 Maroondah Highway Ringwood, VIC, 3134, Australia Phone: +61 3 9879 1226
Emergency Telephone Number:	+61 3 9879 1226
Poisons Information Centre:	24 hour, 7 days a week in an emergency call: 13 11 26

2. HAZARD IDENTIFICATION

HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

Signal Word: Danger

Hazard Pictograms:



Hazard Classifications: Serious Eye Damage/Irritation - Category 1
Long-term Hazard To The Aquatic Environment - Category 1
Acute Hazard To The Aquatic Environment - Category 1

Hazard Statement: H318 Causes serious eye damage.
H410 Very toxic to aquatic life with long lasting effects

Prevention Precautionary Statements: P280 Wear eye protection/face protection.
P273 Avoid release to the environment.



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- Response Precautionary Statements:** P305 + P351 + P338 + P310
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.
- Storage Precautionary Statements:** P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.
- Disposal Precautionary Statements:** P501 Dispose of contents/container in accordance with local, regional, national, and international regulations.
- Poison Schedule:** Schedule 7

DANGEROUS GOOD CLASSIFICATION

Not classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

3. COMPOSITION INFORMATION

CHEMICAL ENTITY	CAS NO.	PROPORTION %
Chlorhexidine Digluconate	18472-51-0	10
Water	7732-18-5	to 100

4. FIRST AID MEASURES

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126, New Zealand 0800 764 766).

- Inhalation:** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms, call a Poison Centre or doctor/physician. Apply resuscitation if victim is not breathing. Administer oxygen if breathing is difficult.
- Skin Contact:** IF ON SKIN: Remove contaminated clothing and shoes immediately. Flush skin with running water for at least 15 minutes; Wash with plenty of soap and water. If skin irritation or rash occurs, get medical advice/attention.
- Eye Contact:** If this product comes in contact with eyes:
Wash out immediately with water.

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If irritation continues, seek medical attention.
Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Ingestion: Immediately give a glass of water.
First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Suggested treatment regime for biguanide intoxication:

Establish airway and assist ventilation with positive end expiratory pressure, if required, after endotracheal intubation. Circulatory competence must be maintained - monitor blood pressure carefully.

Induction of emesis with Ipecac may be contraindicated because of biguanide-induced gastric mucosal irritation.

Gastric lavage, following endotracheal intubation may be preferred. Activated charcoal and cathartics placed through the lavage tube may be useful. Forcing fluids may be counterproductive and result in fluid overload.

Hemodialysis may be useful as, in addition to facilitating the removal of biguanide and excess lactate, it permits the administration of adequate amounts of sodium bicarbonate without the risk of fluid overload or hypernatremia.

Hypoglycemia can be treated immediately with 50 ml of 50% glucose intravenously in adults or 0.5 g/kg per dose in children.

Acidosis may be treated with IV sodium bicarbonate (1-2 mEq/kg); doses of 44-50 mEq every 15 minutes may be required. Ensure that arterial blood gases, serum sodium chloride, potassium and ECG are monitored. The patient may require 200-400 mEq of sodium bicarbonate.

Dehydration and hypovolemia may require placement of a central venous line.

Hypotension may be treated by placing the patient in Trendelenburg's position and the cautious use of IV fluids. Pressor amines should be used cautiously, with blood lactate monitoring, as they may increase lactic acid production.

ELLENHORN and BARCELOUX: Medical Toxicology; Diagnosis and Treatment of Human Poisoning. 1988

5. FIRE FIGHTING MEASURES

Hazchem Code: 3Z

Fire Fighting: Alert Fire Brigade and tell them location and nature of hazard.
Wear breathing apparatus plus protective gloves in the event of a fire.
Prevent, by any means available, spillage from entering drains or water courses.

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Use firefighting procedures suitable for surrounding area.

DO NOT approach containers suspected to be hot.

Cool fire exposed containers with water spray from a protected location.

If safe to do so, remove containers from path of fire.

Equipment should be thoroughly decontaminated after use.

Fire/Explosion Hazard:

Non-combustible.

Not considered a significant fire risk, however containers may burn.

May emit corrosive fumes. Containers may explode when heated.

6. ACCIDENTAL RELEASE MEASURES

Minor Spills:

Clean up all spills immediately.

Avoid breathing vapours and contact with skin and eyes.

Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material, or vermiculite. Wipe up.

Place in a suitable, labelled container for waste disposal.

Large Spills:

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
Wear breathing apparatus plus protective gloves
- Prevent, by any means available, spillage from entering drains or water course. Stop leak if safe to do so.
- Contain spill with sand, earth, or vermiculite.
- Collect recoverable product into labelled containers for recycling. Neutralise/decontaminate residue (see Section 13 for specific agent). Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean-up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. If contamination of drains or waterways occurs, advise emergency services

**Dangerous Goods -Initial
Emergency Response Guide No:**

Not applicable

7. HANDLING AND STORAGE

Handling:

Avoid all personal contact, including inhalation.

Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area.

Avoid contact with moisture.

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Avoid contact with incompatible materials. When handling, **DO NOT** eat, drink or smoke. Keep containers securely sealed when not in use.

Avoid physical damage to containers.

Always wash hands with soap and water after handling.

Work clothes should be laundered separately. Launder contaminated clothing before re-use. Use good occupational work practice.

Observe manufacturer's storage and handling recommendations contained within this SDS.

Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

DO NOT allow clothing wet with material to stay in contact with skin.

Storage:

Store in a cool, dry, well-ventilated place and out of direct sunlight. Store away from foodstuffs.

Keep container standing upright. Keep containers closed when not in use - check regularly for leaks.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National Occupation Exposure Hazards:

Not available

Biological Limit Values:

As per the "National Model Regulations for the Control of Workplace Hazardous Substances (Safe Work Australia)" the ingredients in this material do not have a Biological Limit Allocated.

Engineering Controls:

Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Use only in well ventilated areas. Within poorly ventilated spaces, use with local exhaust ventilation or while wearing appropriate respirator. Vapour is heavier than air - prevent concentration in hollows or sumps. Do NOT enter confined spaces where vapour may have collected.

Personal Protection Equipment:

Safety glasses with side shields. Chemical goggles.

Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.

This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

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See Hand protection below:

Wear chemical protective gloves, e.g., PVC.

Wear safety footwear or safety gumboots, e.g., Rubber

NOTE:

The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.

Contaminated leather items, such as shoes, belts and watchbands should be removed and destroyed.

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

The exact breakthrough time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g., Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

· Some glove polymer types are less affected by movement and this should be considered when considering gloves for long-term use.

· Contaminated gloves should be replaced.

As defined in ASTM F-739-96 in any application, gloves are rated as:

- Excellent when breakthrough time > 480 min
- Good when breakthrough time > 20 min
- Fair when breakthrough time < 20 min
- Poor when glove material degrades

For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.

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It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.

Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be considered to ensure selection of the most appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Other Protection:

Overalls, P.V.C, apron, barrier cream, skin cleansing cream, eye wash unit.

Hygiene Measures:

Keep away from food, drink, and animal feedstuffs. When using do not eat, drink, or smoke. Wash hands prior to eating, drinking, or smoking. Avoid contact with clothing. Avoid eye contact and repeated or prolonged skin contact. Avoid inhalation of vapour, mist, or aerosols. Ensure that eyewash stations and safety showers are close to the workstation location.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Liquid
Colour:	Clear, Colorless
Solubility:	Miscible with water
Specific gravity:	Approx. 1.05
Relative Vapor Density (air=1)	Not available
Vapour Pressure (20 °C):	Not available
Flash Point (°C):	Not available
Flammability Limits (%):	Not available
Autoignition Temperature (°C):	Not available
Melting Point/Range (°C):	Not available
Boiling Point/Range (°C):	Not available
pH:	Not available
Viscosity:	Not available
Total VOC (g/Litre):	Not available

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10. STABILITY AND REACTIVITY

Chemical Stability:	Due to the cationic character of Chlorhexidine salts, they are chemically incompatible with anionic compounds. Unstable in the presence of incompatible material. Product is considered stable. Hazardous polymerisation will not occur.
Conditions to Avoid:	Extremes of temperature and direct sunlight.
Incompatible Materials:	Strong oxidizing agents
Hazardous Decomposition Products:	Thermal decomposition may result in the release of toxic and/or irritating fumes.
Hazardous Reactions:	No known hazardous reactions.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Inhalation:	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Skin Contact:	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Ingestion:	The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

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Biguanide have been used in the oral management of mild to moderately severe stable, non-insulin-dependent (type II) diabetes mellitus in patients who are usually over 40 years old and who are obese, and most often have an adult onset of their illness. The administration of oral hypoglycemic drugs has been reported to be associated with increased cardiovascular mortality as compared to treatment with diet alone or diet plus insulin.

Phenformin, previously marketed as an oral hypoglycaemic agent in the USA, was removed from approval of use because of its association with the development of lactic acidosis, a metabolic aberration resulting in mortality rates of between 50% and 70%.

Ethanol intake prior to or concomitant with the ingestion of phenformin in therapeutic or excessive dosage appears to predispose the patient to the development of lactic acidosis with potentially serious outcomes. Modification of the basic biguanide structure results in differences in potency, metabolism, excretion and probably toxicity. Adverse effects of overexposure to the biguanides may include absent corneal reflexes and fixed dilated pupils, nausea, vomiting, diarrhoea, abdominal cramps, anorexia, weight loss, epigastric discomfort and pain, haematemesis (blood in the vomit), agitation, confusion, lethargy, seizures, extensor plantar reflexes, coma, rapid, deep respiration and pulmonary hypertension; death may ensue. Cardiovascular involvement may result in tachycardia, hypotension, and myocardial infarction.

The skin may become dry and hot and the patient may become dehydrated. The biguanides exert their physiological effects by a similar basic mechanism; they induce an increase in peripheral glucose utilisation, a decrease in hepatic gluconeogenesis and a decrease in the intestinal absorption of glucose, Vitamin B12 and bile acids. Biguanides do not usually lower the blood sugar of healthy individuals unless ethanol or other hypoglycaemic agents are ingested simultaneously. Lactic acidosis may follow the action of the biguanides on cell membranes to reduce oxidative phosphorylation and thus to produce tissue anoxia with increased peripheral glucose uptake.

Eye Contact: Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

Chronic: Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals.

Toxicity:

Chlorhexidine gluconate: Dermal (rabbit) LD50 > 5000 mg/kg
Oral (Rat) LD50 0.002 mg/kg

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's

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SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances.

Acute Toxicity:	Not considered to be toxic.
Respiratory or Skin Sensitisation:	Not expected to be respiratory sensitiser.
Carcinogenicity:	Not considered to be carcinogenic.
Reproductivity:	Not considered to be toxic to reproduction.

12. ECOLOGICAL INFORMATION

Ecotoxicity:	COMPONENT: Chlorhexidine digluconate, pure (CAS No. 18472-51-0): - Acute toxicity for fish: LC50, Fish: 2.08 mg/L - Acute toxicity for crustacea: EC50, Daphnia magna: 0.087 mg/L - Acute toxicity for algae: ErC50, Algae: 0.081 mg/L
Persistence and Degradability:	Not readily biodegradable
Bioaccumulation Potential:	COMPONENT: Chlorhexidine digluconate, pure (CAS No. 18472-51-0): - Bioconcentration factor (BCF): 42 L/kg
Mobility:	COMPONENT: Chlorhexidine digluconate, pure (CAS No. 18472-51-0): - LogKoc: >3.9
Environmental Protection:	Prevent this material entering waterways, drains and sewers.

13. DISPOSAL CONSIDERATIONS

Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used, see "Section 8. Exposure Controls and Personal Protection" of this SDS.

If possible, material and its container should be recycled. If material or container cannot be recycled, dispose in accordance with local, regional, national, and international Regulations.

14. TRANSPORT INFORMATION

Land Transport (ADG):



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U.N. Number:	3082	Subsidiary Risk:	Not Applicable
Hazchem Code:	3Z	Pack. Group:	No data available
CAS Number:	See ingredients		

Air Transport (ICAO-IATA / DGR):

U.N. Number:	3082	Class:	9 Miscellaneous Dangerous Goods and Articles.
Hazchem Code:	3Z	Subsidiary Risk:	Not Applicable
CAS Number:	See ingredients	Pack. Group:	III

Sea Transport (IMDG-Code / GGVSee):

U.N. Number:	3082	Transport Hazard Class:	9 Miscellaneous Dangerous Goods and Articles.
Hazchem Code:	3Z	Subsidiary Risk:	Not Applicable
CAS Number:	See ingredients	Pack. Group:	III
Marine Pollutant:	Yes		

15. REGULATORY INFORMATION

Regulatory Information: Classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons. (SUSMP).
Schedule 7

This material/constituent(s) is covered by the following requirements: All components of this product are listed or exempt from the Australian Inventory of Industrial Chemicals (AIIC)

16. OTHER INFORMATION

Product is considered safe if used as intended.
Product is intended for professional dental/medical use only.

This information was prepared in good faith from the best information available at the time of issue. It is based on the present level of research and to this extent we believe it is accurate. However, no guarantee of accuracy is made or implied and since conditions of use are beyond our control, all information relevant to usage is offered without warranty. The manufacturer will not be held responsible for any unauthorised use of this information or for any modified or altered versions.

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