Safety Data Sheet

Revision Date: 6/18/2021

Section 1: Chemical Identification

1.1 Chemical Identification

Product Name: Chlorhexidine
Alternative Name: Bis(5-(p-chlorophenyl)biguanidinio)hexane
Catalog Number: C-615

1.2 Relevant Uses and Uses Advised Against

Recommended use: This product is not for use in humans. It is for research purposes only.

1.3 Supplier Contact Information

Distributed by: Gold Biotechnology, Inc.
1328 Ashby Rd.
St. Louis, MO 63132
Phone: (314) 890-8778
Fax: (314) 890-0503
Email: **contactgoldbio86@goldbio.com**

1.4 Emergency Contact Information

Emergency Phone: (800)248-7609 (Monday-Friday, 9:00 a.m. – 5:00 p.m. CST)

Section 2: Hazardous Information

2.1 GHS Classification

Skin Irritation (Category 2)
Eye Irritation (Category 2A)
Respiratory Sensitizer (Category 1)
Specific Target Organ Toxicity, Single Exposure (Category 3)
Acute Aquatic Toxicity (Category 1)
Chronic Aquatic Toxicity (Category 1)

2.2 GHS Label Elements, Including Precautionary statements

DANGER!

2.3 Hazard Statements

H315: Causes skin irritation
H319: Causes serious eye irritation
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled

H410: Very toxic to aquatic life with long lasting effects
H400: Very toxic to aquatic life

2.4 Precautionary Statements

P264: Wash skin thoroughly after handling
P280: Wear protective gloves/protective clothing/eye protection/face protection
P302+352: IF ON SKIN: Wash with soap and water
P321: Specific treatment (see First Aid Measures on this label)
P332+313: If skin irritation occurs: Get medical advice/attention
P362: Take off contaminated clothing and wash before reuse
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P337+313: If eye irritation persists get medical advice/attention
P361: Remove/Take off immediately all contaminated clothing
P285: In case of inadequate ventilation wear respiratory protection
P304+341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P312: Call a POISON CENTER or doctor/physician if you feel unwell
P403+233: Store in a well ventilated place. Keep container tightly closed
P405: Store locked up
P391: Collect spillage
P501: Dispose of contents/container to an approved waste disposal plant

2.6 Target Organs

Respiratory system

Section 3: Composition/Information on Ingredients

3.1 Composition

Identity:	Chlorhexidine
IUPAC:	(1E)-2-[6-[[amino-[(E)-[amino-(4-chloroanilino)methylidene]amino] methylidene]amino]hexyl]-1-[amino-(4-chloroanilino)methylidene] guanidine
Synonyms:	Fimeil, Hexadol, Nolvasan, Rotersept, Soretol
CAS Number:	55-56-1
Molecular Formula:	$C_{22}H_{30}Cl_2N_{10}$
Molecular Weight:	505.446 g/mol

Section 4: First Aid Measures

4.1 Detailed First Aid Measures

Inhalation:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Skin:	Immediately wash skin copiously with soap and water. Take victim immediately to hospital. Consult a physician.
Eye:	Immediately rinse out with water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Consult a

physician.

Ingestion: Wash out mouth with water. Drink plenty of water. Consult a physician. Never give anything by mouth to an unconscious person.

Notes to Physician: Treat symptomatically and supportively.

4.2 Most Important Symptoms And Effects, Either Acute Or Delayed

The most important known symptoms and effects are described in the labeling (see section2). And /or in section 11.

4.3 Indication of immediate medical attention and special treatment needed

Not available

Section 5: Fire Fighting Measures

5.1 Conditions of flammability:

5.2 Suitable extinguishing media:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.3 Specific hazards arising from the chemical

During a fire, highly toxic gases may be generated by thermal decomposition or combustion – Carbon oxides, Nitrogen oxides (NOx), Hydrogen chloride gas.

5.4 Specific protective actions for fire-fighters:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

6.2 Environmental precautions:

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up:

Soak up with absorbent material, discard.

Section 7: Handling and Storage

7.1 Precautions for safe handling:

Always wear personal protective equipment (PPE, see section 8).

7.2 Conditions for safe storage, including and incompatibilities:

Keep container tightly closed.

Store at room temperature.

Section 8: Exposure Controls / Personal Protection

8.1 Control Parameters:

Contains no substances with occupational exposure limit values.

8.2: Appropriate engineering controls:

Contains no substances with occupational exposure limit values.

8.3 Personal Protective Equipment (PPE):

Eye/Face Protection: Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique - without touching outer surface of glove - to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Other Protective Clothing or Equipment: Wear appropriate protective clothing to prevent exposure.

Section 9: Physical and Chemical Properties

9.1 General chemical and physical properties

Appearance:	White or almost white powder
Odor:	Not Available
Odor Threshold:	Not Available
pH:	Not Available
Melting Point:	134 - 136°C
Freezing Point:	Not Available
Boiling Point/Range:	Not Available
Flash Point:	Not Available
Evaporation Rate:	Not Available
Lower Explosion Limit:	Not Available
Upper Explosion Limit:	Not Available
Vapor Pressure:	Not Available

Vapor Density:	Not Available
Relative Density:	Not Available
Solubility:	Water: 0.8 g/L at 20°C
Partition Coefficient n-octanol/water:	log Pow: 0.08
Auto-Ignition Temperature:	Not Available
Decomposition Temperature:	Not Available
Viscosity:	Not Available

Section 10: Stability and Reactivity Data

10.1 Reactivity:

Not available

10.2 Chemical Stability:

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions:

Not available.

10.4 Conditions to avoid:

Incompatible materials.

10.5 Incompatible materials:

Violent reactions possible with: Strong oxidizing agents.

10.6 Hazardous decomposition products:

Hazardous decomposition products formed under fire conditions. Carbon oxides, Nitrogen oxides (NOx), Hydrogen chloride gas.

Section 11: Toxicological Information

11.1 Toxicological effects

Acute toxicity:

Chlorhexidine	Oral:	LD50 (Mouse): 2515 mg/kg

Skin corrosion/irritation:

Not available.

Respitory or skin sensitization:

Not available.

Germ cell mutagenicity:

Not available.

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity:

Not available.

STOT-single exposure:

Not available.

STOT-repeated exposure:

Not available.

Aspiration hazard:

Not available.

Likely routes of exposure:

Respiratory organs, mouth, skin, and eyes.

Symptoms of exposure:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information:

RTECS: DU1925000

Section 12: Ecological Information

12.1 Toxicity:

Toxicity to fish - Semi-static test: LC50 - *Danio rerio* (zebra fish)-1.4 mg/L-96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates - static test: EC50 - *Daphnia magna* (Water flea)-0.049 mg/L-48 h (OECD Test Guideline 202) Remarks: (in analogy to similar products)
Toxicity to algae - static test: EC10- *Desmodesmus subspicatus* (green algae)-0.017 mg/L - 72 h (OECD Test Guideline 201) Remarks: (in analogy to similar products)

12.2 Persistence and degradability:

Biodegradability
Aerobic - Exposure time 28 d - Result: 0 %-Not readily biodegradable. (OECD Test Guideline 301D)

Chemical Oxygen Demand (COD)110 mg/g Remarks: (IUCLID)

12.3 Bioacumulative potential:

Not available.

12.4 Mobility in soil:

Not available.

12.5 Other adverse effects:

Very toxic to aquatic life, long-term effects

Section 13 Disposal Considerations

Dispose of product in accordance with local rules and regulations.

Section 14: Transport Information

14.1 US Department of Transportation (DOT)

This material is considered to be non-hazardous for transport.

14.2 International Maritime Dangerous Goods (IMDG):

UN Number:	3077
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Chlorhexidine)
Class:	9
Packing Group:	III
Marine Pollutant:	Yes

14.2 International Air Transportation Association (IATA)

UN Number:	3077
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Chlorhexidine)
Class:	9
Packing Group:	III
Marine Pollutant:	Yes

Section 15: Regulatory Information

SARA 302 Components:

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:

No SARA Hazards.

Massachusetts Right To Know Components:	CAS - No.
Chlorhexidine	55-56-1
Pennsylvania Right To Know Components:	CAS - No.
Chlorhexidine	55-56-1
New Jersey Right To Know Components:	CAS - No.
Chlorhexidine	55-56-1

California Prop. 65 Components:

This product does not contain any chemical known to the State of California to cause cancer, birth, or any other reproductive defects.

Section 16: Other Information

While Gold Biotechnology, Inc. believes the information contained herein to be true and accurate, it has relied on information provided by others. Gold Biotechnology, INC. makes no warranties, express or implied, as to the accuracy or adequacy of the information contained herein or with respect to the results to be obtained from the use of the product. Gold Biotechnology, Inc. disclaims all liability with respect to the use of this product, including without limitation, liability for injury to the user or third-party persons.

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