

Chlorhexidine (23.96%) Formulation

Version Revision Date: SDS Number: Date of last issue: 13.02.2023 Date of first issue: 25.08.2022 2.0 04.04.2023 10839979-00004

1. PRODUCT AND COMPANY IDENTIFICATION

: Chlorhexidine (23.96%) Formulation Product name

Manufacturer or supplier's details

Company MSD

Address Briahnager - Off Pune Nagar Road

Wagholi - Pune - India 412 207

Telephone +1-908-740-4000

Emergency telephone number: +1-908-423-6000

E-mail address EHSDATASTEWARD@msd.com

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product

Restrictions on use

Not applicable

2. HAZARDS IDENTIFICATION

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989

Classification

Not classified as hazardous according to criteria laid down in Part I of Schedule-1.

GHS Classification

Serious eye damage/eye irri- : Category 2A

tation

Specific target organ toxicity - : Category 2 (Liver)

repeated exposure

Short-term (acute) aquatic

hazard

Category 2

Long-term (chronic) aquatic

hazard

Category 2

GHS label elements

Hazard pictograms





Signal word Warning



Chlorhexidine (23.96%) Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 13.02.2023

 2.0
 04.04.2023
 10839979-00004
 Date of first issue: 25.08.2022

Hazard statements : H319 Causes serious eye irritation.

H373 May cause damage to organs (Liver) through prolonged

or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P260 Do not breathe mist or vapours.

P264+P265 Wash hands thoroughly after handling. Do not

touch eyes.

P273 Avoid release to the environment. P280 Wear eye protection/face protection.

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.

P319 Get medical help if you feel unwell.

P337 + P317 If eye irritation persists: Get medical help.

P391 Collect spillage.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	AS-No. Concentration (%	
		w/w)	
Chlorhexidine	55-56-1	>= 20 - < 25	
Nonylphenol, ethoxylated	9016-45-9	>= 1 - < 2.5	

4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical ad-

vice immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

If inhaled : If inhaled, remove to fresh air.

Get medical attention if symptoms occur.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty

of water.

Get medical attention if symptoms occur.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water

for at least 15 minutes.

If easy to do, remove contact lens, if worn.

Get medical attention.

If swallowed, DO NOT induce vomiting.



Chlorhexidine (23.96%) Formulation

Version Revision Date: SDS Number: Date of last issue: 13.02.2023 20 04.04.2023 10839979-00004 Date of first issue: 25.08.2022

Get medical attention if symptoms occur.

Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and Causes serious eve irritation.

delayed

May cause damage to organs through prolonged or repeated

exposure

Protection of first-aiders

First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

Treat symptomatically and supportively. Notes to physician

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water spray

> Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

None known.

Specific hazards during fire-

fiahtina

Exposure to combustion products may be a hazard to health.

Hazardous combustion prod: :

ucts

Carbon oxides

Specific extinguishing meth-

ods

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment.

Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

Evacuate area.

Special protective equipment:

for firefighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec: : tive equipment and emer-

gency procedures

Use personal protective equipment.

Follow safe handling advice (see section 7) and personal pro-

tective equipment recommendations (see section 8).

Avoid release to the environment. Environmental precautions

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages

cannot be contained.

Methods and materials for containment and cleaning up Soak up with inert absorbent material.

For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absor-

bent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to deter-



Chlorhexidine (23.96%) Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 13.02.2023

 2.0
 04.04.2023
 10839979-00004
 Date of first issue: 25.08.2022

mine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : Use only with adequate ventilation. Advice on safe handling : Do not breathe mist or vapours.

Do not swallow. Do not get in eyes.

Avoid prolonged or repeated contact with skin.

Wash skin thoroughly after handling.

Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure as-

sessment

Take care to prevent spills, waste and minimize release to the

environment.

Conditions for safe storage : Keep in properly labelled containers.

Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:

Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis	
Chlorhexidine	55-56-1	TWA	40 μg/m3 (OEB 3)	Internal	
	Further information: RSEN				
		Wipe limit	400 μg/100 cm2	Internal	

Engineering measures : Use appropriate engineering controls and manufacturing

technologies to control airborne concentrations (e.g., drip-less

quick connections).

All engineering controls should be implemented by facility design and operated in accordance with GMP principles to

protect products, workers, and the environment.

Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face contain-

ment devices).

Minimize open handling.

Personal protective equipment

Respiratory protection : If adequate local exhaust ventilation is not available or expo-

sure assessment demonstrates exposures outside the rec-

ommended guidelines, use respiratory protection.

Filter type
Hand protection

Particulates type



Chlorhexidine (23.96%) Formulation

Version Revision Date: SDS Number: Date of last issue: 13.02.2023 20 04.04.2023 10839979-00004 Date of first issue: 25.08.2022

Material Chemical-resistant gloves

Remarks Consider double gloving.

Wear safety glasses with side shields or goggles. Eve protection

If the work environment or activity involves dusty conditions.

mists or aerosols, wear the appropriate goggles.

Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or

aerosols.

Work uniform or laboratory coat. Skin and body protection

> Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable

suits) to avoid exposed skin surfaces.

Use appropriate degowning techniques to remove potentially

contaminated clothing.

If exposure to chemical is likely during typical use, provide eye Hygiene measures

flushing systems and safety showers close to the working

place.

When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the

use of administrative controls.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance suspension

Colour blue

Odour No data available

Odour Threshold No data available

5.55 - 6.65 (20 °C) рH

Melting point/freezing point No data available

Initial boiling point and boiling:

range

No data available

No data available Flash point

Evaporation rate No data available

Flammability (solid, gas) Not applicable

Flammability (liquids) No data available

Upper explosion limit / Upper : No data available

flammability limit



Chlorhexidine (23.96%) Formulation

Version Revision Date: SDS Number: Date of last issue: 13.02.2023 2.0 04.04.2023 10839979-00004 Date of first issue: 25.08.2022

Lower explosion limit / Lower :

flammability limit

No data available

Vapour pressure No data available

Relative vapour density No data available

Relative density 1.010 - 1.020

Density No data available

Solubility(ies)

Water solubility No data available

Partition coefficient: n-

octanol/water

Not applicable

Auto-ignition temperature No data available

Decomposition temperature No data available

Viscosity

No data available Viscosity, kinematic

Explosive properties Not explosive

Oxidizing properties The substance or mixture is not classified as oxidizing.

Molecular weight No data available

Particle size Not applicable

10. STABILITY AND REACTIVITY

Reactivity Not classified as a reactivity hazard. Chemical stability Stable under normal conditions. Can react with strong oxidizing agents.

Possibility of hazardous reac- :

tions

Conditions to avoid None known.

Incompatible materials Oxidizing agents Hazardous decomposition

products

No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of: Inhalation

exposure Skin contact

Ingestion Eye contact

Acute toxicity

Not classified based on available information.

Product:

Acute toxicity estimate: > 5,000 mg/kg Acute oral toxicity



Chlorhexidine (23.96%) Formulation

Version Revision Date: SDS Number: Date of last issue: 13.02.2023 2.0 04.04.2023 10839979-00004 Date of first issue: 25.08.2022

Method: Calculation method

Components:

Chlorhexidine:

Acute oral toxicity LD50 Oral (Mouse): 1,260 mg/kg

LD50 Oral (Rabbit): 1,100 mg/kg

LD50 Oral (Rat): 2,000 mg/kg

Acute toxicity (other routes of : LD50 (Rat): 21 mg/kg

administration)

Application Route: Intravenous

Nonylphenol, ethoxylated:

Acute oral toxicity LD50 (Rat): 500 - 2,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Components:

Nonylphenol, ethoxylated:

Species Rabbit

Method **OECD Test Guideline 404**

Result No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:

Chlorhexidine:

Species Rabbit

Result Mild eye irritation

Nonylphenol, ethoxylated:

Species Rabbit

Method **OECD Test Guideline 405** Result Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

Nonylphenol, ethoxylated:



Chlorhexidine (23.96%) Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 13.02.2023

 2.0
 04.04.2023
 10839979-00004
 Date of first issue: 25.08.2022

Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig
Result : negative

Remarks : Based on data from similar materials

Germ cell mutagenicity

Not classified based on available information.

Components:

Chlorhexidine:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Test Type: Chromosomal aberration Test system: Chinese hamster ovary cells

Result: negative

Genotoxicity in vivo : Test Type: dominant lethal test

Species: Mouse Result: negative

Test Type: Cytogenetic assay

Species: Hamster Result: negative

Nonylphenol, ethoxylated:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Remarks: Based on data from similar materials

Carcinogenicity

Not classified based on available information.

Components:

Chlorhexidine:

Species : Rat

Application Route : oral (drinking water)

Exposure time : 2 Years Frequency of Treatment : daily

NOAEL: 38 mg/kg body weight

Result : negative

Species : Rat

Application Route : oral (drinking water)

Exposure time : 2 Years
Frequency of Treatment : daily

NOAEL: 158 mg/kg body weight

Result : negative



Chlorhexidine (23.96%) Formulation

Version Revision Date: SDS Number: Date of last issue: 13.02.2023 2.0 04.04.2023 10839979-00004 Date of first issue: 25.08.2022

Reproductive toxicity

Not classified based on available information.

Components:

Chlorhexidine:

Effects on fertility : Species: Rat

Fertility: NOAEL: 100 mg/kg body weight

Effects on foetal develop-

ment

Species: Rat

Developmental Toxicity: NOAEL: 300 mg/kg body weight

Species: Rabbit

Developmental Toxicity: NOAEL: 40 mg/kg body weight

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

May cause damage to organs (Liver) through prolonged or repeated exposure.

Components:

Chlorhexidine:

Target Organs : Liver

Assessment : May cause damage to organs through prolonged or repeated

exposure.

Repeated dose toxicity

Components:

Chlorhexidine:

Species : Rat

NOAEL : 158 mg/kg
Application Route : Oral
Exposure time : 2 yr

Species : Rabbit
LOAEL : 250 mg/kg
Application Route : Dermal
Exposure time : 13 Weeks
Target Organs : Skin, Liver

Aspiration toxicity

Not classified based on available information.

Experience with human exposure

Components:

Chlorhexidine:

General Information : Symptoms: Headache Inhalation : Target Organs: Lungs

Symptoms: Asthmatic appearance, bronchospasm, discomfort



Chlorhexidine (23.96%) Formulation

Version Revision Date: SDS Number: Date of last issue: 13.02.2023 2.0 04.04.2023 10839979-00004 Date of first issue: 25.08.2022

in the chest, upper respiratory tract infection

Target Organs: Gastrointestinal tract Ingestion

Symptoms: Gastrointestinal disturbance, Gastrointestinal tract

damage

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Chlorhexidine:

Toxicity to fish (Fish): 2.088 mg/l

Exposure time: 96 h

Method: ECOSAR (Ecological Structure Activity Relation-

ships)

Toxicity to daphnia and other:

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 0.222 mg/l

Exposure time: 48 h

Method: ECOSAR (Ecological Structure Activity Relation-

ships)

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): 1.124

ma/l

End point: Growth rate Exposure time: 96 hrs

Method: ECOSAR (Ecological Structure Activity Relation-

ships)

M-Factor (Acute aquatic tox-:

icity)

M-Factor (Chronic aquatic

toxicity)

plants

Nonylphenol, ethoxylated:

Toxicity to daphnia and other:

aquatic invertebrates

EC50 (Daphnia sp. (water flea)): 1.82 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

EC50 (Pseudokirchneriella subcapitata (green algae)): 20

Exposure time: 48 h

Persistence and degradability

Components:

Chlorhexidine:

Biodegradability Remarks: Not inherently biodegradable.

Nonylphenol, ethoxylated:

Biodegradability Result: Readily biodegradable.

Biodegradation: 97 %



Chlorhexidine (23.96%) Formulation

Version Revision Date: SDS Number: Date of last issue: 13.02.2023 2.0 04.04.2023 10839979-00004 Date of first issue: 25.08.2022

Exposure time: 30 d

Bioaccumulative potential

Components:

Chlorhexidine:

Partition coefficient: n-

octanol/water

log Pow: 4.85

Nonylphenol, ethoxylated:

Partition coefficient: n-

octanol/water

log Pow: 4.48

Mobility in soilNo data available

Other adverse effects

Components:

Nonylphenol, ethoxylated:

Results of PBT and vPvB

assessment

This substance is considered to be persistent, bioaccumulat-

ing and toxic (PBT).

This substance is considered to be very persistent and very

bioaccumulating (vPvB).

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with local regulations.

Do not dispose of waste into sewer.

Contaminated packaging : Empty containers should be taken to an approved waste han-

dling site for recycling or disposal.

If not otherwise specified: Dispose of as unused product.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Chlorhexidine, Nonylphenol, ethoxylated)

Class : 9
Packing group : III
Labels : 9

IATA-DGR

UN/ID No. : UN 3082

Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.

(Chlorhexidine, Nonylphenol, ethoxylated)



Chlorhexidine (23.96%) Formulation

Version Revision Date: SDS Number: Date of last issue: 13.02.2023 2.0 04.04.2023 10839979-00004 Date of first issue: 25.08.2022

Class : 9 Packing group : III

Labels : Miscellaneous

Packing instruction (cargo

aircraft)

Packing instruction (passen: 964

ger aircraft)

Environmentally hazardous : yes

IMDG-Code

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

964

(Chlorhexidine, Nonylphenol, ethoxylated)

Class : 9
Packing group : III
Labels : 9
EmS Code : F-A

EmS Code : F-A, S-F Marine pollutant : yes

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

The components of this product are reported in the following inventories:

AICS : not determined

DSL : not determined

IECSC : not determined

16. OTHER INFORMATION

Revision Date : 04.04.2023

Further information

Sources of key data used to :

compile the Safety Data Sheet Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-

cy, http://echa.europa.eu/

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Date format : dd.mm.yyyy



Chlorhexidine (23.96%) Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 13.02.2023

 2.0
 04.04.2023
 10839979-00004
 Date of first issue: 25.08.2022

Full text of other abbreviations

AllC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR -Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration: NO(A)EL - No Observed (Adverse) Effect Level: NOELR - No Observable Effect Loading Rate: NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals: OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

IN / EN