

**Chlorhexidine (0.8%) Liquid Formulation**

|         |                |                |                                 |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number:    | Date of last issue: 27.11.2023  |
| 3.0     | 06.09.2024     | 10863774-00008 | Date of first issue: 11.10.2022 |

**SECTION 1. IDENTIFICATION**

Product identifier : Chlorhexidine (0.8%) Liquid Formulation

Other means of identification : Coopers Hibitane Disinfectant (36230)

**Manufacturer or supplier's details**

Company : MSD

Address : Rua Coronel Bento Soares, 530  
Cruzeiro - Sao Paulo - Brazil CEP 12730-340

Telephone : 908-740-4000

Emergency telephone : 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

**SECTION 2. HAZARDS IDENTIFICATION****GHS Classification in accordance with ABNT NBR 14725 Standard**

Skin irritation : Category 3

Serious eye damage : Category 1

Skin sensitization : Category 1

Short-term (acute) aquatic hazard : Category 2

Long-term (chronic) aquatic hazard : Category 1

**GHS label elements in accordance with ABNT NBR 14725 Standard**

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H316 Causes mild skin irritation.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.

## Chlorhexidine (0.8%) Liquid Formulation

Version 3.0      Revision Date: 06.09.2024      SDS Number: 10863774-00008      Date of last issue: 27.11.2023  
Date of first issue: 11.10.2022

H401 Toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements :

**Prevention:**  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ eye protection/ face protection.

**Response:**  
P302 + P352 IF ON SKIN: Wash with plenty of water.  
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 CENTER/ doctor.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.  
P391 Collect spillage.

## Other hazards which do not result in classification

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

## Components

| Chemical name            | CAS-No.   | Classification                                                                                                                     | Concentration (% w/w) |
|--------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Nonylphenol, ethoxylated | 9016-45-9 | Acute Tox. (Oral), 4<br>Eye Dam., 1<br>Aquatic Acute, 1<br>Aquatic Chronic, 1                                                      | $\geq 3$ -< 5         |
| Pine oil                 | 8002-09-3 | Flam. Liq., 3<br>Acute Tox. (Oral), 5<br>Skin Irrit., 2<br>Skin Sens., 1<br>Asp. Tox., 1<br>Aquatic Acute, 2<br>Aquatic Chronic, 2 | $\geq 1$ -< 2,5       |
| Chlorhexidine            | 55-56-1   | Acute Tox. (Oral), 4<br>Eye Irrit., 2B<br>STOT RE, (Liver) , 2<br>Aquatic Acute, 1<br>Aquatic Chronic, 1                           | $\geq 0,25$ -< 1      |

## SECTION 4. FIRST AID MEASURES

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

**Chlorhexidine (0.8%) Liquid Formulation**

|         |                |                |                                 |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number:    | Date of last issue: 27.11.2023  |
| 3.0     | 06.09.2024     | 10863774-00008 | Date of first issue: 11.10.2022 |

|                                                             |   |                                                                                                                                                                                                              |
|-------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                             |   | advice immediately.<br>When symptoms persist or in all cases of doubt seek medical advice.                                                                                                                   |
| If inhaled                                                  | : | If inhaled, remove to fresh air.<br>Get medical attention if symptoms occur.                                                                                                                                 |
| In case of skin contact                                     | : | In case of contact, immediately flush skin with plenty of water.<br>Remove contaminated clothing and shoes.<br>Get medical attention.<br>Wash clothing before reuse.<br>Thoroughly clean shoes before reuse. |
| In case of eye contact                                      | : | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.<br>If easy to do, remove contact lens, if worn.<br>Get medical attention immediately.                               |
| If swallowed                                                | : | If swallowed, DO NOT induce vomiting.<br>Get medical attention if symptoms occur.<br>Rinse mouth thoroughly with water.                                                                                      |
| Most important symptoms and effects, both acute and delayed | : | Causes mild skin irritation.<br>May cause an allergic skin reaction.<br>Causes serious eye damage.                                                                                                           |
| 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).                                  |
| Notes to physician                                          | : | Treat symptomatically and supportively.                                                                                                                                                                      |

**SECTION 5. FIRE-FIGHTING MEASURES**

|                                                |   |                                                                                                                                                                                                                                                 |
|------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Suitable extinguishing media                   | : | Water spray<br>Alcohol-resistant foam<br>Carbon dioxide (CO <sub>2</sub> )<br>Dry chemical                                                                                                                                                      |
| Unsuitable extinguishing media                 | : | None known.                                                                                                                                                                                                                                     |
| Specific hazards during fire fighting          | : | Exposure to combustion products may be a hazard to health.                                                                                                                                                                                      |
| Hazardous combustion products                  | : | Carbon oxides                                                                                                                                                                                                                                   |
| Specific extinguishing methods                 | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.<br>Use water spray to cool unopened containers.<br>Remove undamaged containers from fire area if it is safe to do so.<br>Evacuate area. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus.<br>Use personal protective equipment.                                                                                                                                            |

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

|                               |   |                                    |
|-------------------------------|---|------------------------------------|
| Personal precautions, protec- | : | Use personal protective equipment. |
|-------------------------------|---|------------------------------------|

## Chlorhexidine (0.8%) Liquid Formulation

|         |                |                |                                 |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number:    | Date of last issue: 27.11.2023  |
| 3.0     | 06.09.2024     | 10863774-00008 | Date of first issue: 11.10.2022 |

- |                                                       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tive equipment and emergency procedures               | : | Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Environmental precautions                             | : | <p>Avoid release to the environment.</p> <p>Prevent further leakage or spillage if safe to do so.</p> <p>Prevent spreading over a wide area (e.g., by containment or oil barriers).</p> <p>Retain and dispose of contaminated wash water.</p> <p>Local authorities should be advised if significant spillages cannot be contained.</p>                                                                                                                                                                                                                                                                                                                           |
| Methods and materials for containment and cleaning up | : | <p>Soak up with inert absorbent material.</p> <p>For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.</p> <p>Clean up remaining materials from spill with suitable absorbent.</p> <p>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 determine which regulations are applicable.</p> <p>Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.</p> |

## SECTION 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     | : | <p>Do not get on skin or clothing.</p> <p>Avoid breathing mist or vapors.</p> <p>Do not swallow.</p> <p>Do not get in eyes.</p> <p>Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment</p> <p>Keep container tightly closed.</p> <p>Take care to prevent spills, waste and minimize release to the environment.</p>                                                                                                                                                                                                          |
| Hygiene measures            | : | <p>If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.</p> <p>When using do not eat, drink or smoke.</p> <p>Contaminated work clothing should not be allowed out of the workplace.</p> <p>Wash contaminated clothing before re-use.</p> <p>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.</p> |
| Conditions for safe storage | : | Keep in properly labeled containers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

**Chlorhexidine (0.8%) Liquid Formulation**

Version 3.0      Revision Date: 06.09.2024      SDS Number: 10863774-00008      Date of last issue: 27.11.2023  
Date of first issue: 11.10.2022

Materials to avoid : Keep tightly closed.  
Store in accordance with the particular national regulations.  
Do not store with the following product types:  
Strong oxidizing agents  
Gases

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Ingredients with workplace control parameters**

| Components                      | CAS-No. | Value type<br>(Form of exposure) | Control parameters / Permissible concentration | Basis    |
|---------------------------------|---------|----------------------------------|------------------------------------------------|----------|
| Chlorhexidine                   | 55-56-1 | TWA                              | 40 µg/m <sup>3</sup> (OEB 3)                   | Internal |
| Further information: RSEN, DSEN |         |                                  |                                                |          |
|                                 |         | Wipe limit                       | 100 µg/100 cm <sup>2</sup>                     | 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 containment devices).  
Minimize open handling.

**Personal protective equipment**

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection

Material : Chemical-resistant gloves

Remarks : Consider double gloving.

Eye protection : Wear safety glasses with side shields or goggles.  
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.

Skin and body protection : Work uniform or laboratory coat.  
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.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state : liquid

**Chlorhexidine (0.8%) Liquid Formulation**

|         |                |                |                                 |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number:    | Date of last issue: 27.11.2023  |
| 3.0     | 06.09.2024     | 10863774-00008 | Date of first issue: 11.10.2022 |

---

|                                                  |   |                                                          |
|--------------------------------------------------|---|----------------------------------------------------------|
| Color                                            | : | clear, Hazy, yellow                                      |
| Odor                                             | : | pine                                                     |
| Odor Threshold                                   | : | No data available                                        |
| pH                                               | : | No data available                                        |
| Melting point/freezing point                     | : | No data available                                        |
| Initial boiling point and boiling range          | : | No data available                                        |
| Flash point                                      | : | No data available                                        |
| Evaporation rate                                 | : | No data available                                        |
| Flammability (solid, gas)                        | : | Not applicable                                           |
| Flammability (liquids)                           | : | No data available                                        |
| Upper explosion limit / Upper flammability limit | : | No data available                                        |
| Lower explosion limit / Lower flammability limit | : | No data available                                        |
| Vapor pressure                                   | : | No data available                                        |
| Relative vapor density                           | : | No data available                                        |
| Relative density                                 | : | No data available                                        |
| Density                                          | : | No data available                                        |
| Solubility(ies)                                  |   |                                                          |
| Water solubility                                 | : | No data available                                        |
| Partition coefficient: n-octanol/water           | : | Not applicable                                           |
| Autoignition temperature                         | : | No data available                                        |
| Decomposition temperature                        | : | No data available                                        |
| Viscosity                                        |   |                                                          |
| Viscosity, kinematic                             | : | No data available                                        |
| Explosive properties                             | : | Not explosive                                            |
| Oxidizing properties                             | : | The substance or mixture is not classified as oxidizing. |
| Molecular weight                                 | : | No data available                                        |
| Particle characteristics                         |   |                                                          |

**Chlorhexidine (0.8%) Liquid Formulation**

|         |                |                |                                 |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number:    | Date of last issue: 27.11.2023  |
| 3.0     | 06.09.2024     | 10863774-00008 | Date of first issue: 11.10.2022 |

Particle size : No data available

**SECTION 10. STABILITY AND REACTIVITY**

|                                    |                                                  |
|------------------------------------|--------------------------------------------------|
| Reactivity                         | : Not classified as a reactivity hazard.         |
| Chemical stability                 | : Stable under normal conditions.                |
| Possibility of hazardous reactions | : Can react with strong oxidizing agents.        |
| Conditions to avoid                | : None known.                                    |
| Incompatible materials             | : Oxidizing agents                               |
| Hazardous decomposition products   | : No hazardous decomposition products are known. |

**SECTION 11. TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure : Inhalation  
Skin contact  
Ingestion  
Eye contact

**Acute toxicity**

Not classified based on available information.

**Product:**

Acute oral toxicity : Acute toxicity estimate: > 5.000 mg/kg  
Method: Calculation method

**Components:****Nonylphenol, ethoxylated:**

Acute oral toxicity : LD50 (Rat): 500 - 2.000 mg/kg

**Pine oil:**

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg  
Remarks: Based on data from similar materials

**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 administration) : LD50 (Rat): 21 mg/kg  
Application Route: Intravenous

**Skin corrosion/irritation**

Causes mild skin irritation.

**Components:****Nonylphenol, ethoxylated:**

## Chlorhexidine (0.8%) Liquid Formulation

|         |                |                |                                 |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number:    | Date of last issue: 27.11.2023  |
| 3.0     | 06.09.2024     | 10863774-00008 | Date of first issue: 11.10.2022 |

---

|         |                           |
|---------|---------------------------|
| Species | : Rabbit                  |
| Method  | : OECD Test Guideline 404 |
| Result  | : No skin irritation      |

**Pine oil:**

|         |                                        |
|---------|----------------------------------------|
| Species | : Rabbit                               |
| Result  | : Skin irritation                      |
| Remarks | : Based on data from similar materials |

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Components:****Nonylphenol, ethoxylated:**

|         |                                   |
|---------|-----------------------------------|
| Species | : Rabbit                          |
| Result  | : Irreversible effects on the eye |
| Method  | : OECD Test Guideline 405         |

**Pine oil:**

|         |                                        |
|---------|----------------------------------------|
| Species | : Bovine cornea                        |
| Method  | : OECD Test Guideline 437              |
| Remarks | : Based on data from similar materials |

|        |                     |
|--------|---------------------|
| Result | : No eye irritation |
|--------|---------------------|

**Chlorhexidine:**

|         |                       |
|---------|-----------------------|
| Species | : Rabbit              |
| Result  | : Mild eye irritation |

**Respiratory or skin sensitization****Skin sensitization**

May cause an allergic skin reaction.

**Respiratory sensitization**

Not classified based on available information.

**Components:****Nonylphenol, ethoxylated:**

|                    |                                        |
|--------------------|----------------------------------------|
| Test Type          | : Maximization Test                    |
| Routes of exposure | : Skin contact                         |
| Species            | : Guinea pig                           |
| Result             | : negative                             |
| Remarks            | : Based on data from similar materials |

**Pine oil:**

|            |                                                           |
|------------|-----------------------------------------------------------|
| Assessment | : Probability or evidence of skin sensitization in humans |
| Remarks    | : Based on data from similar materials                    |

**Chlorhexidine (0.8%) Liquid Formulation**

|         |                |                |                                 |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number:    | Date of last issue: 27.11.2023  |
| 3.0     | 06.09.2024     | 10863774-00008 | Date of first issue: 11.10.2022 |

**Germ cell mutagenicity**

Not classified based on available information.

**Components:****Nonylphenol, ethoxylated:**

|                       |   |                                                                                                                         |
|-----------------------|---|-------------------------------------------------------------------------------------------------------------------------|
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES)<br>Result: negative<br>Remarks: Based on data from similar materials |
|-----------------------|---|-------------------------------------------------------------------------------------------------------------------------|

**Pine oil:**

|                       |   |                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES)<br>Method: OECD Test Guideline 471<br>Result: negative<br>Remarks: Based on data from similar materials<br><br>Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)<br>Method: OPPTS 870.5550<br>Result: negative<br>Remarks: Based on data from similar materials |
| Genotoxicity in vivo  | : | Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)<br>Species: Mouse<br>Application Route: Intraperitoneal injection<br>Method: OPPTS 870.5395<br>Result: negative<br>Remarks: Based on data from similar materials                                                                                                            |

**Chlorhexidine:**

|                       |   |                                                                                                                                                                                 |
|-----------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES)<br>Result: negative<br><br>Test Type: Chromosomal aberration<br>Test system: Chinese hamster ovary cells<br>Result: negative |
| Genotoxicity in vivo  | : | Test Type: dominant lethal test<br>Species: Mouse<br>Result: negative<br><br>Test Type: Cytogenetic assay<br>Species: Hamster<br>Result: negative                               |

**Carcinogenicity**

Not classified based on available information.

**Components:****Chlorhexidine:**

|         |   |     |
|---------|---|-----|
| Species | : | Rat |
|---------|---|-----|

**Chlorhexidine (0.8%) Liquid Formulation**

|         |                |                |                                 |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number:    | Date of last issue: 27.11.2023  |
| 3.0     | 06.09.2024     | 10863774-00008 | Date of first issue: 11.10.2022 |

|                        |                         |
|------------------------|-------------------------|
| 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              |

**Reproductive toxicity**

Not classified based on available information.

**Components:****Pine oil:**

|                              |                                                                                                                                                                                               |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Effects on fetal development | : Test Type: Embryo-fetal development<br>Species: Rat<br>Application Route: Ingestion<br>Method: OECD Test Guideline 414<br>Result: negative<br>Remarks: Based on data from similar materials |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Chlorhexidine:**

|                              |                                                                                                                                                      |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Effects on fertility         | : Species: Rat<br>Fertility: NOAEL: 100 mg/kg body weight                                                                                            |
| Effects on fetal development | : Species: Rat<br>Developmental Toxicity: NOAEL: 300 mg/kg body weight<br><br>Species: Rabbit<br>Developmental Toxicity: NOAEL: 40 mg/kg body weight |

**STOT-single exposure**

Not classified based on available information.

**STOT-repeated exposure**

Not classified based on available information.

**Components:****Chlorhexidine:**

|               |                                                                      |
|---------------|----------------------------------------------------------------------|
| Target Organs | : Liver                                                              |
| Assessment    | : May cause damage to organs through prolonged or repeated exposure. |

**Repeated dose toxicity****Components:****Pine oil:**

**Chlorhexidine (0.8%) Liquid Formulation**

|         |                |                |                                 |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number:    | Date of last issue: 27.11.2023  |
| 3.0     | 06.09.2024     | 10863774-00008 | Date of first issue: 11.10.2022 |

|                   |                                        |
|-------------------|----------------------------------------|
| Species           | : Rat                                  |
| NOAEL             | : > 200 mg/kg                          |
| Application Route | : Skin contact                         |
| Exposure time     | : 90 Days                              |
| Remarks           | : Based on data from similar materials |

**Chlorhexidine:**

|                   |             |
|-------------------|-------------|
| Species           | : Rat       |
| NOAEL             | : 158 mg/kg |
| Application Route | : Oral      |
| Exposure time     | : 2 y       |

|                   |               |
|-------------------|---------------|
| 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.

**Components:****Pine oil:**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

**Experience with human exposure****Components:****Chlorhexidine:**

|                     |                                                                                                                                    |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------|
| General Information | : Symptoms: Headache                                                                                                               |
| Inhalation          | : Target Organs: Lungs<br>Symptoms: Asthmatic appearance, bronchospasm, discomfort in the chest, upper respiratory tract infection |
| Ingestion           | : Target Organs: Gastrointestinal tract<br>Symptoms: Gastrointestinal disturbance, Gastrointestinal tract damage                   |

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****Nonylphenol, ethoxylated:**

|                                                     |                                                                                                                                       |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Toxicity to fish                                    | : LC50 (Pimephales promelas (fathead minnow)): > 0,1 - 1 mg/l<br>Exposure time: 96 h<br>Remarks: Based on data from similar materials |
| Toxicity to daphnia and other aquatic invertebrates | : EC50 (Ceriodaphnia dubia (water flea)): > 0,1 - 1 mg/l<br>Exposure time: 48 h                                                       |

## Chlorhexidine (0.8%) Liquid Formulation

Version 3.0      Revision Date: 06.09.2024      SDS Number: 10863774-00008      Date of last issue: 27.11.2023  
Date of first issue: 11.10.2022

|                                                                        |                                                                                                                                                                             |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                        | Remarks: Based on data from similar materials                                                                                                                               |
| Toxicity to algae/aquatic plants                                       | : ErC50 (Selenastrum capricornutum (green algae)): > 1 - 10 mg/l<br>Exposure time: 72 h<br>Method: OECD Test Guideline 201<br>Remarks: Based on data from similar materials |
|                                                                        | EC10 (Selenastrum capricornutum (green algae)): > 1 mg/l<br>Exposure time: 72 h<br>Method: OECD Test Guideline 201<br>Remarks: Based on data from similar materials         |
| M-Factor (Acute aquatic toxicity)                                      | : 1                                                                                                                                                                         |
| Toxicity to fish (Chronic toxicity)                                    | : NOEC (Oryzias latipes (Japanese medaka)): > 0,1 - 1 mg/l<br>Exposure time: 100 d<br>Remarks: Based on data from similar materials                                         |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : NOEC (Mysidopsis bahia (opossum shrimp)): > 0,001 - 0,01 mg/l<br>Exposure time: 28 d<br>Remarks: Based on data from similar materials                                     |
| M-Factor (Chronic aquatic toxicity)                                    | : 10                                                                                                                                                                        |

**Pine oil:**

|                                                     |                                                                                                                                      |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Toxicity to fish                                    | : LC50 (Pimephales promelas (fathead minnow)): > 1 - 10 mg/l<br>Exposure time: 96 h<br>Remarks: Based on data from similar materials |
| Toxicity to daphnia and other aquatic invertebrates | : EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l<br>Exposure time: 48 h<br>Remarks: Based on data from similar materials           |

**Chlorhexidine:**

|                                                     |                                                                                                                                                                                        |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Toxicity to fish                                    | : (Fish): 2,088 mg/l<br>Exposure time: 96 h<br>Method: ECOSAR (Ecological Structure Activity Relationships)                                                                            |
| Toxicity to daphnia and other aquatic invertebrates | : EC50 (Daphnia magna (Water flea)): 0,222 mg/l<br>Exposure time: 48 h<br>Method: ECOSAR (Ecological Structure Activity Relationships)                                                 |
| Toxicity to algae/aquatic plants                    | : ErC50 (Pseudokirchneriella subcapitata (green algae)): 1,124 mg/l<br>End point: Growth rate<br>Exposure time: 96 hrs<br>Method: ECOSAR (Ecological Structure Activity Relationships) |
| M-Factor (Acute aquatic toxicity)                   | : 1                                                                                                                                                                                    |

**Chlorhexidine (0.8%) Liquid Formulation**

|         |                |                |                                 |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number:    | Date of last issue: 27.11.2023  |
| 3.0     | 06.09.2024     | 10863774-00008 | Date of first issue: 11.10.2022 |

icity)  
M-Factor (Chronic aquatic : 1  
toxicity)

**Persistence and degradability****Components:****Nonylphenol, ethoxylated:**

Biodegradability : Result: Not readily biodegradable.  
Remarks: Based on data from similar materials

**Pine oil:**

Biodegradability : Result: Readily biodegradable.  
Remarks: Based on data from similar materials

**Chlorhexidine:**

Biodegradability : Remarks: Not inherently biodegradable.

**Bioaccumulative potential****Components:****Nonylphenol, ethoxylated:**

Partition coefficient: n- : log Pow: 4,48  
octanol/water

**Pine oil:**

Partition coefficient: n- : log Pow: > 4  
octanol/water Remarks: Calculation

**Chlorhexidine:**

Partition coefficient: n- : log Pow: 4,85  
octanol/water

**Mobility in soil**

No data available

**Other adverse effects**

No data available

**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : Do not dispose of waste into sewer.  
Dispose of in accordance with local regulations.  
Contaminated packaging : Empty containers should be taken to an approved waste  
handling site for recycling or disposal.  
If not otherwise specified: Dispose of as unused product.

**SECTION 14. TRANSPORT INFORMATION****International Regulations**

**Chlorhexidine (0.8%) Liquid Formulation**

|         |                |                |                                 |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number:    | Date of last issue: 27.11.2023  |
| 3.0     | 06.09.2024     | 10863774-00008 | Date of first issue: 11.10.2022 |

---

**UNRTDG**

|                           |                                                                                                    |
|---------------------------|----------------------------------------------------------------------------------------------------|
| UN number                 | : UN 3082                                                                                          |
| Proper shipping name      | : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(Chlorhexidine, Nonylphenol, ethoxylated) |
| Class                     | : 9                                                                                                |
| Packing group             | : III                                                                                              |
| Labels                    | : 9                                                                                                |
| Environmentally hazardous | : yes                                                                                              |

**IATA-DGR**

|                                          |                                                                                                    |
|------------------------------------------|----------------------------------------------------------------------------------------------------|
| UN/ID No.                                | : UN 3082                                                                                          |
| Proper shipping name                     | : Environmentally hazardous substance, liquid, n.o.s.<br>(Chlorhexidine, Nonylphenol, ethoxylated) |
| Class                                    | : 9                                                                                                |
| Packing group                            | : III                                                                                              |
| Labels                                   | : Miscellaneous                                                                                    |
| Packing instruction (cargo aircraft)     | : 964                                                                                              |
| Packing instruction (passenger aircraft) | : 964                                                                                              |
| Environmentally hazardous                | : yes                                                                                              |

**IMDG-Code**

|                      |                                                                                                    |
|----------------------|----------------------------------------------------------------------------------------------------|
| UN number            | : UN 3082                                                                                          |
| Proper shipping name | : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(Chlorhexidine, Nonylphenol, ethoxylated) |
| Class                | : 9                                                                                                |
| Packing group        | : III                                                                                              |
| Labels               | : 9                                                                                                |
| EmS Code             | : F-A, S-F                                                                                         |
| Marine pollutant     | : yes                                                                                              |

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**Domestic regulation****ANTT**

|                              |                                                                                                    |
|------------------------------|----------------------------------------------------------------------------------------------------|
| UN number                    | : UN 3082                                                                                          |
| Proper shipping name         | : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(Chlorhexidine, Nonylphenol, ethoxylated) |
| Class                        | : 9                                                                                                |
| Packing group                | : III                                                                                              |
| Labels                       | : 9                                                                                                |
| Hazard Identification Number | : 90                                                                                               |

**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.

**Chlorhexidine (0.8%) Liquid Formulation**

|         |                |                |                                 |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number:    | Date of last issue: 27.11.2023  |
| 3.0     | 06.09.2024     | 10863774-00008 | Date of first issue: 11.10.2022 |

**SECTION 15. REGULATORY INFORMATION****Safety, health and environmental regulations/legislation specific for the substance or mixture**

National List of Carcinogenic Agents for Humans - (LINACH) : Not applicable

Brazil. List of chemicals controlled by the Federal Police : Not applicable

**The ingredients of this product are reported in the following inventories:**

AICS : not determined

DSL : not determined

IECSC : not determined

**SECTION 16. OTHER INFORMATION**

Revision Date : 06.09.2024  
Date format : dd.mm.yyyy

**Further information**

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <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.

**Full text of other abbreviations**

AIIC - 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

**Chlorhexidine (0.8%) Liquid Formulation**

|         |                |                |                                 |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number:    | Date of last issue: 27.11.2023  |
| 3.0     | 06.09.2024     | 10863774-00008 | Date of first issue: 11.10.2022 |

---

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.

BR / Z8