

SAFETY DATA SHEETS

This SDS packet was issued with item:

078037231

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

078912905

The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).

078037223

MATERIAL SAFETY DATA SHEET

FORT DODGE

Nolvasan® Solution

Fort Dodge Laboratories
800 5th Street NW
PO Box 518
Fort Dodge, IA 50501

Emergency Telephone No.: (515) 955-4600
General Information No.: (515) 955-4600
Preparation Date: May 29, 1986
Revision Date: December 12, 1994

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 PRODUCT NAME: Nolvasan® Solution

1.2 USE: A scented disinfectant for the disinfection of inanimate objects to aid in the control of many common microbiological agents.

1.3 SIZE: 1 pint and 1 gallon containers.

1.4 SYNONYMS: Nolvasan® Scented Disinfectant, Chlorasan® Scented Disinfectant (Franklin Laboratories)

2. COMPOSITION / INFORMATION ON INGREDIENTS (Indicates Active Ingredient)

INGREDIENT NAME	SYNONYMS	CAS NO.	CONCENTRATION
Chlorhexidine Diacetate	Chlorhexidine Acetate	56-95-1	2.0%
Isopropyl Alcohol	Isopropanol	67-63-0	7.9%
Scent, dye, surfactants, and other ingredients considered to be trade secrets (these are considered to be non-hazardous).	NA	NA	Balance

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

3.1 POTENTIAL HEALTH EFFECTS: Adverse health effects associated with this product are linked to the ingredient isopropyl alcohol.

3.1.1 ACUTE EFFECTS:

INHALATION: Prolonged or repeated inhalation of high concentrations of vapors may be harmful, causing irritation of the mucous membranes and upper respiratory tract, nausea, vomiting, and headache.

INGESTION: May be harmful if swallowed, causing gastrointestinal irritation, nausea, vomiting, and central nervous system effects.

SKIN: May be mildly irritating to the skin, causing drying.

EYE: Extremely irritating to the eyes.

3.1.1 TARGET ORGAN EFFECTS (SUBCHRONIC/CHRONIC): Nerves/Kidneys

3.1.1 CARCINOGENIC EFFECTS: This product is not known to be carcinogenic.

3.1.1 REPRODUCTIVE/TERATOGENIC EFFECTS: There are no adverse reproductive or teratogenic effects associated with this product. However, the effects of this product on pregnant women have not been thoroughly investigated.

Product Name: Nolvasan® S

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3.2 CARCINOGENICITY STATUS: This product is not known to be carcinogenic.**3.3 MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Respiratory ailments or skin disorders.**4. FIRST AID MEASURES****INHALATION:** Remove victim to fresh air. Administer oxygen if necessary. Seek medical attention immediately.**INGESTION:** Seek medical attention immediately.**SKIN:** Wash affected area thoroughly with soap and water. Consult a physician.**EYE:** Seek medical attention immediately.**5. FIRE FIGHTING MEASURES****5.1 FLASH POINT:** 103.5° F **METHOD:** Open Cup**5.2 AUTOIGNITION TEMPERATURE:** Not established.**5.3 FLAMMABILITY LIMITS:** (limits below are for isopropyl alcohol)

LOWER LIMIT: 2.5%

UPPER LIMIT: 12%

5.4 UNUSUAL FIRE AND EXPLOSION HAZARDS: This product may release toxic vapors when subjected to fire conditions.**5.5 COMMON EXTINGUISHING METHODS:** Alcohol foam, water spray, carbon dioxide, dry chemical.**5.6 FIRE FIGHTING PROCEDURES:** Firefighters should take standard precautions when fighting fires involving this material, including the use of SCBA.**6. ACCIDENTAL RELEASE MEASURES**

For small spills involving this product (i.e., those resulting from normal usage), wipe up the spill using paper towels or other suitable material. Wash area with water. For large spills, eliminate all sources of ignition. Contain the spill using booms, dikes, or absorbent material to prevent releases into waterways or onto land. Collect spilled material for future disposal.

7. HANDLING AND STORAGE

Store in a cool, dry place away from fire or flame. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**8.1 EXPOSURE GUIDELINES:****INGREDIENT NAME****OSHA PEL/STEL****ACGIH TLV/STEL**

Isopropyl Alcohol

400 ppm/500 ppm

400 ppm/500 ppm

Chlorhexidine Acetate

NE/NE

NE/NE

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- 8.2 **VENTILATION:** Special ventilation provisions are not considered necessary for normal usage of this product. If large quantities are being handled, local exhaust ventilation should be provided.
- 8.3 **RESPIRATORY PROTECTION:** Respiratory protection is not considered necessary for normal usage of this product. If necessary, use a NIOSH-approved chemical cartridge respirator fitted with organic vapor cartridges.
- 8.4 **PROTECTIVE GLOVES:** Latex gloves are recommended.
- 8.5 **EYE PROTECTION:** Safety glasses with side shields or safety goggles are recommended.
- 8.6 **OTHER:** NA

9. PHYSICAL AND CHEMICAL PROPERTIES

- 9.1 **APPEARANCE AND ODOR:** Clear, blue, scented liquid.
- 9.2 **MELTING POINT:** Not established.
- 9.3 **BOILING POINT:** Not established.
- 9.4 **SPECIFIC GRAVITY / DENSITY:** 0.98
- 9.5 **VAPOR DENSITY:** Not established.
- 9.6 **VAPOR PRESSURE:** Not established.
- 9.7 **SOLUBILITY**
 - **WATER:** Complete
 - **OTHER SOLVENTS:** Not established.
- 9.8 **DECOMPOSITION TEMPERATURE:** Not established.
- 9.9 **VISCOSITY:** Not established.
- 9.10 **pH:** Not established.

10. STABILITY AND REACTIVITY

- 10.1 **STABILITY:** This product is considered stable under normal conditions.
- 10.2 **HAZARDOUS DECOMPOSITION PRODUCTS:** This product may release toxic vapors when subjected to fire conditions.
- 10.3 **CONDITIONS TO AVOID:** Avoid exposing this product to fire, flame, or excessive heat.
- 10.4 **MATERIALS AND SUBSTANCES TO AVOID (INCOMPATIBILITY):** Avoid contact with strong acids or bases.

11. TOXICOLOGICAL INFORMATION

- 11.1 **ACUTE DATA:** Toxicological data presented below is for the ingredients isopropyl alcohol and chlorhexidine diacetate.
- INHALATION:** Prolonged or repeated inhalation of high vapor concentrations may be harmful.
- INGESTION:** May be harmful if swallowed. (Isopropyl Alcohol) Oral LD50 (Rats) - 5,045 mg/Kg
(Chlorhexidine Diacetate) Oral LD50 (Mouse) - 2 g/Kg.
- EYES:** Extremely irritating to the eyes.
- SKIN:** May be irritating to the skin.

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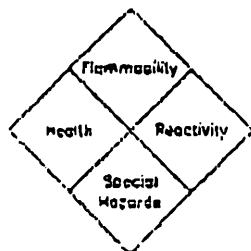
- 11.2 TARGET ORGAN EFFECTS DATA (SUBCHRONIC/CHRONIC):** Nerves/Liver
- 11.3 CARCINOGENIC EFFECTS DATA:** This product is not known to be carcinogenic.
- 11.4 MUTAGENIC EFFECTS DATA:** This product is not known to be mutagenic.
- 11.5 REPRODUCTIVE / TERATOGENIC EFFECTS DATA:** There are no adverse reproductive or teratogenic effects associated with this product. However, the effects of exposure to this product on pregnant women have not been thoroughly investigated.

12 TRANSPORT INFORMATION

- 12.1 U.S. DEPARTMENT OF TRANSPORTATION (DOT):** This product is classified as a flammable liquid under U.S. DOT regulations. Consult DOT regulations for specific shipping requirements.
- 12.2 INTERNATIONAL TRANSPORTATION REGULATIONS:** This product is classified as a flammable liquid under international transportation regulations. Consult international regulations for specific shipping requirements.

13 REGULATORY INFORMATION

- 13.1 FEDERAL REGULATIONS:** This product is a U.S. EPA registered pesticide (EPA Reg. No. 1117-48). Waste product is classified as a hazardous waste under U.S. EPA RCRA regulations.
- 13.2 STATE REGULATIONS:** NA

14 OTHER INFORMATION**14.1 HAZARD RATINGS**

NFPA*:
 Health - 1
 Flammability - 2
 Reactivity - 0
 Special Hazards - NA

Health
Flammability
Reactivity
Personal Protection

HMIS:
 Health - 1
 Flammability - 2
 Reactivity - 0
 Personal Protection - NA

* A hazard rating has not been developed by NFPA for this product. NFPA-derived rating is based on NFPA hazard evaluation criteria.

14.2 PREPARATION AND REVISION INFORMATION

Fort Dodge Laboratories, Department of Safety

The information and recommendations presented in this MSDS are based on sources believed to be accurate. However, Fort Dodge Laboratories, its Divisions and/or Subsidiaries assumes no liability for the accuracy, completeness or suitability of this information. It is the product user's responsibility to determine the suitability of the information for their particular purposes.

The hazard ratings included in this MSDS have been developed based on NFPA and HMIS criteria as well as professional judgement. This information is intended solely for the use of individuals trained in these hazard rating systems.

This product should only be used by, or under the supervision of, a person trained and qualified to administer the product. Please refer to the package insert for indications or contraindications for use, and for dosage information.

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MATERIAL SAFETY DATA SHEET

Product Id: RM1000398 Revision Date: 5/9/2005 Print Date: 07/26/2005

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Code: RM1000398

Product Name: Nolvasan S

Supplier: Fort Dodge Animal Health
800 5th Street NW
PO Box 518
Fort Dodge, IA 50501

General Information No.: (515) 955-4600
Emergency Telephone No.: (515) 955-6033

Emergency Telephone Number: (800) 424-9300

General Telephone Number: (515) 955-4600

Prepared By: Environmental, Health + Safety

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Weight %	ACGIH TWA:	CAS-No.	Wyeth OEG:	Units for TWAs, STELs, ACGIH, OSHA:
Inert Ingredients 0000-00-0	90.1	NA	Various	NA	mg/m3
Isopropyl Alcohol 67-63-0	7.9	400 ppm	67-63-0	Not Established	mg/m3
Chlorhexidine Acetate 56-95-1	2	None	56-95-1	Not Established	mg/m3

3. HAZARDS IDENTIFICATION

Inhalation: None

Skin Contact: None known

Ingestion: Harmful if swallowed.

Product Id: RM1000398

Product Name:

Nolvasan S

Eye Contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lens if present. If redness or irritation persists have eyes examined by a doctor immediately.

4. FIRST AID MEASURES

Eye Contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lens if present. If redness or irritation persists have eyes examined by a doctor immediately.

Skin Contact: Flush skin with plenty of soap and water for at least 15 minutes. Remove all contaminated clothing and shoes. Get medical attention if symptoms persist.

Inhalation: No specific treatment, treat symptomatically. If breathing is difficult, give oxygen. If respiratory arrest occurs provide artificial respiration and seek immediate medical assistance.

Ingestion: No specific treatment, treat symptomatically. Call medical doctor or poison control center immediately if large quantities are ingested.

Aggravated Conditions: None known.

Notes to Physician: Direct treatment at control of symptoms.

5. FIRE FIGHTING MEASURES

Extinguishing Media and Fire Fighting Instructions: Follow your company's procedures. Use an extinguishing agent suitable for the surrounding class of fire.

Special Hazards: None. Dispose of fire debris and contaminated fire fighting water in accordance with regulations.

Personal Protective Equipment: Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Methods For Cleaning Up: Follow your company's spill procedures. Keep people out of area. Put on appropriate personal protective equipment (See Section 8). Use a tool to scoop up and put into appropriate labeled waste container.

Personal Precautions: Put on appropriate personal protective equipment (see Section 8).

Environmental Precautions: No special measures are typically indicated.

7. HANDLING AND STORAGE

Handling

Technical Measures/Precautions: No special technical measures required when product is used as directed on label or package insert.

Safe Handling Advice:

Avoid contact with eyes, skin, and clothing. Avoid generating or breathing product aerosol. Wash after handling.

Storage**Technical Measures/Storage Conditions:**

Store tightly closed in original container. Keep containers in a well ventilated, secure location.

Incompatible Products:

No special restrictions on storage with other products

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:

General ventilation is typically sufficient to keep airborne levels below established values when product is used as directed on label or on package insert. Provide eye wash and quick drench shower close to work station. Clean, appropriately launder, or dispose of all potentially contaminated work clothing, foot wear, and protective equipment after use.

Personal Protective Equipment**Respiratory Protection:**

Respirator selection must be based on anticipated exposure levels, product hazards, and the safe working limits of the selected respirator. A respirator is not needed under normal and intended conditions of product use. If the product is to be used to aerosol fogging, persons entering the room should use a NIOSH approved respirator fitted with pesticide cartridges with a protection factor suitable for the exposure levels involved.

Hand Protection:

gloves. Chemical resistant.

Skin and Body Protection:

Lab coat.

Eye Protection:

safety glasses, goggles, face-shield or other full-face protection where potential exists for direct exposure to aerosols or splashes.

Hygiene Measures:

Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:

clear blue

Odor:

No information available

pH:

Not available.

Boiling Point/Range:

Not applicable

Melting Point/Range:

May start to solidify at -86 deg. C (-122.8 deg. F) based on data for isopropanol.

Density:

0.98

Vapor Density:

Weighted average: 2.07 (Air=1)

Physical State:

LIQUID

Vapor Pressure:

33 mmHg (@22 deg. C)

Viscosity

Not applicable

Partition Coefficient:

Not applicable

Solubility:

Easily soluble in cold water, hot water.

Solubility in Other Solvents:

None known

Product Id:

RM1000398

Product Name:

Nolvasan S

Flash Point:	Open Cup: 39.722 deg C (103.5 deg F)
Explosion limits	
- upper	no data available
- lower	no data available
Autoignition Temperature:	Not applicable
Decomposition Temperature:	Not applicable
Dust Explosivity	Not applicable.

10. STABILITY AND REACTIVITY

Stability:	no data available
Conditions to Avoid:	Extremely reactive or incompatible with oxidizing agents. reactive with acids, alkalis.
Materials to Avoid:	no data available
Polymerization:	no data available
Hazardous Decomposition Products:	carbon oxides (CO, CO2) nitrogen oxides (NO, NO2) halogenated compounds.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:	
LC50/inhalation/rat =	not determined
Principle Routes of Exposure:	Kidney. Central nervous system.
Eye Contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lens if present. If redness or irritation persists have eyes examined by a doctor immediately.
Skin Contact:	Harmful in contact with skin.
Ingestion:	Harmful if swallowed.
Inhalation:	Moderately irritating to the respiratory system. (USA) Irritant (EU) Moderately toxic via inhalation.
Chronic Toxicity:	
Target Organs	Kidneys. Central Nervous System (CNS).
Specific Effects:	nausea headache Respiratory tract irritation. allergic reaction.
Sensitization:	May cause allergic reactions in persons sensitive to chlorhexidine.
Carcinogenic Effects:	Classified 3 (not classifiable for human) by IARC
Mutagenic Effects:	Not mutagenic in a standard battery of genetic toxicological tests.

Teratogenic Effects:	No known human teratogenic effect.
Reproductive Toxicity:	No evidence of human reproductive effects.
Aggravated Conditions:	None known.

12. ECOLOGICAL INFORMATION

Environmental Fate:	Not available.
Environmental Hazards:	No known significant effects or critical hazards.
Ecotoxicity Effects:	No hazardous ingredients
Aquatic Toxicity:	No hazardous ingredients
Mobility:	no data available
Bioaccumulation:	no data available
Environmental Precautions:	No special measures are typically indicated.

13. DISPOSAL CONSIDERATIONS

Waste/Unused Products:	Avoid disposal, make attempts to use product completely in accordance with intended use. Incinerate unwanted products and waste materials.
Contaminated Packaging:	Not applicable

14. TRANSPORT INFORMATION

DOT

UN/ID Number:	Not controlled.
Proper Shipping Name:	Not controlled.
Hazard Class:	Not controlled.
Packing Group:	Not controlled.
DOT Reportable Quantity (lbs):	Not controlled.
Marine Pollutant:	Not controlled

15. REGULATORY INFORMATION

Indication of Danger:	Not controlled
Other Regulations:	Not controlled

16. OTHER INFORMATION

Additional Advice: Use this product only in accordance with the directions provided on the product label or the package insert.

The information provided in this MSDS is based on current knowledge. However, this does not constitute a warranty by the Company for that information. The product user is responsible for the appropriate and intended handling, use, and disposal of this product in accordance with label or package insert precautions and this information. All materials may present unknown hazards and should be used with caution.

*** End of Safety Data Sheet ***

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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

Product Identifier

Material Name: Nolvasan Solution

Trade Name: NOLVASAN®
Chemical Family: Mixture
Registration Number: EPA Reg. No. 1007-99

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Intended Use: Veterinary product used as disinfectant
Restrictions on Use: Not for human use

Details of the Supplier of the Safety Data Sheet

Zoetis Inc.
100 Campus Drive, P.O. Box 651
Florham Park, New Jersey 07932 (USA)
Rocky Mountain Poison and Drug Center Phone: 1-866-531-8896
Product Support/Technical Services Phone: 1-800-366-5288

Zoetis Belgium S.A.
Mercuriusstraat 20
1930 Zaventem
Belgium

Emergency telephone number:
CHEMTREC (24 hours): 1-800-424-9300
Contact E-Mail: VMIPSrecords@zoetis.com

Emergency telephone number:
International CHEMTREC (24 hours): +1-703-527-3887

2. HAZARDS IDENTIFICATION

Appearance: Clear blue liquid

Classification of the Substance or Mixture

GHS - Classification

Acute Toxicity - Dusts and Mists: Category 4
Acute aquatic toxicity: Category 2
Chronic aquatic toxicity: Category 2

Label Elements

Signal Word: Warning
Hazard Statements: H332 - Harmful if inhaled
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements: P271 - Use only outdoors or in a well-ventilated area
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P273 - Avoid release to the environment
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTRE/doctor/physician if you feel unwell
P391 - Collect spillage
P501 - Dispose of contents/container in accordance with all local and national regulations

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Other Hazards Short Term:

May cause eye irritation . Signs and symptoms might include redness, swelling, blurred vision or pain. May cause slight skin irritation. (based on components) May cause mucous membrane and respiratory tract irritation. Individuals sensitive to this chemical or other materials in its chemical class may develop allergic reactions.
Hazardous Substance. Non-Dangerous Goods.

Australian Hazard Classification (NOHSC):

Note: This document has been prepared in accordance with standards for workplace safety, which requires the inclusion of all known hazards of the product or its ingredients regardless of the potential risk. The precautionary statements and warning included may not apply in all cases. Your needs may vary depending upon the potential for exposure in your workplace.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous

Ingredient	CAS Number	EU EINECS/ELINCS List	GHS Classification	%
Chlorhexidine acetate	56-95-1	200-302-4	Acute Tox. 4 (H302) Acute Tox.2(H330) Eye Irrit.2A (H319) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	2

Additional Information: Ingredient(s) indicated as hazardous have been assessed under standards for workplace safety. In accordance with 29 CFR 1910.1200, the exact percentage composition of this mixture has been withheld as a trade secret.

For the full text of the CLP/GHS abbreviations mentioned in this Section, see Section 16

4. FIRST AID MEASURES

Description of First Aid Measures

Eye Contact: If irritation occurs or persists, get medical attention. Flush eyes with water for at least 15 minutes.

Skin Contact: Remove contaminated clothing and wash exposed area with soap and water. Obtain medical assistance if irritation occurs.

Ingestion: Never give anything by mouth to an unconscious person. Wash out mouth with water. Do not induce vomiting unless directed by medical personnel. Seek medical attention immediately.

Inhalation: Remove to fresh air and keep patient at rest. Seek medical attention immediately.

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Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms and Effects of Exposure:	For information on potential signs and symptoms of exposure, See Section 2 - Hazards Identification and/or Section 11 - Toxicological Information.
Medical Conditions Aggravated by Exposure:	None known

Indication of the Immediate Medical Attention and Special Treatment Needed

Notes to Physician: None

5. FIRE-FIGHTING MEASURES

Extinguishing Media: Extinguish fires with CO₂, extinguishing powder, foam, or water.

Special Hazards Arising from the Substance or Mixture

Hazardous Combustion Products: Formation of toxic gases is possible during heating or fire. May include oxides of carbon nitrogen and products of chlorine .

Fire / Explosion Hazards: Fine particles (such as dust and mists) may fuel fires/explosions.

Advice for Fire-Fighters

During all fire fighting activities, wear appropriate protective equipment, including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Ensure adequate ventilation. Personnel involved in clean-up should wear appropriate personal protective equipment (see Section 8). Minimize exposure.

Environmental Precautions

Place waste in an appropriately labeled, sealed container for disposal. Care should be taken to avoid environmental release.

Methods and Material for Containment and Cleaning Up

Measures for Cleaning / Collecting: Contain the source of spill if it is safe to do so. Collect spill with absorbent material. Clean spill area thoroughly.

Additional Consideration for Large Spills: Non-essential personnel should be evacuated from affected area. Report emergency situations immediately. Clean up operations should only be undertaken by trained personnel.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Use with adequate ventilation. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. When handling, use appropriate personal protective equipment (see Section 8). Wash thoroughly after handling. Releases to the environment should be avoided. Review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure or environmental releases. Potential points of process emissions of this material to the atmosphere should be controlled with dust collectors, HEPA filtration systems or other equivalent controls.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions: Store as directed by product packaging.

Incompatible Materials: Acids and bases , As a precautionary measure, keep away from strong oxidizers

Specific end use(s): No data available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

No Occupational Exposure Limit (OEL) or Short Term Exposure Limit (STEL) has been identified.

The purpose of the Occupational Exposure Band (OEB) classification system is to separate substances into different Hazard categories when the available data are sufficient to do so, but inadequate to establish an Occupational Exposure Limit (OEL). The OEB given is based upon an analysis of all currently available data; as such, this value may be subject to revision when new information becomes available.

Chlorhexidine acetate

Zoetis OEB

OEB 4 (control exposure to the range of 1ug/m³ to <10ug/m³)

Exposure Controls

Engineering Controls:

Engineering controls should be used as the primary means to control exposures. Keep airborne contamination levels within the OEB range. General room ventilation is adequate unless the process generates dust, mist or fumes.

Personal Protective Equipment:

Refer to applicable national standards and regulations in the selection and use of personal protective equipment (PPE).

Hands:

Impervious gloves are recommended if skin contact with drug product is possible and for bulk processing operations.

Eyes:

Wear safety glasses or goggles if eye contact is possible.

Skin:

Impervious protective clothing is recommended if skin contact with drug product is possible and for bulk processing operations.

Respiratory protection:

Whenever air contamination (mist, vapor or odor) is generated, respiratory protection is recommended as a precaution to minimize exposure. If airborne exposures are within or exceed the Occupational Exposure Band (OEB) range, wear an appropriate respirator with a protection factor sufficient to control exposures to the bottom of the OEB range.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:

Liquid

Color:

Blue

Odor:

Pleasant

Odor Threshold:

No data available.

Molecular Formula:

Mixture

Molecular Weight:

Mixture

Solvent Solubility:

No data available

Water Solubility:

Soluble

pH:

No data available.

Melting/Freezing Point (°C):

No data available

Boiling Point (°C):

No data available.

Partition Coefficient: (Method, pH, Endpoint, Value)

No data available

Decomposition Temperature (°C):

No data available.

Evaporation Rate (Gram/s):

No data available

Vapor Pressure (kPa):

No data available

Vapor Density (g/ml):

1.01

Relative Density:

No data available

Viscosity:

No data available

Flammability:

Autoignition Temperature (Solid) (°C):

No data available

Flammability (Solids):

No data available

Flash Point (Liquid) (°C):

No data available

Upper Explosive Limits (Liquid) (% by Vol.):

No data available

Lower Explosive Limits (Liquid) (% by Vol.):

No data available

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10. STABILITY AND REACTIVITY

Reactivity:	No data available
Chemical Stability:	Stable under normal conditions of use.
Possibility of Hazardous Reactions	
Oxidizing Properties:	No data available
Conditions to Avoid:	Fine particles (such as dust and mists) may fuel fires/explosions.
Incompatible Materials:	Acids and bases , As a precautionary measure, keep away from strong oxidizers
Hazardous Decomposition Products:	Toxic fumes of carbon monoxide, carbon dioxide, oxides of nitrogen, hydrogen chloride and other chlorine-containing compounds may be emitted.

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

General Information: Toxicological properties of the formulation have not been investigated. The information in this section describes the potential hazards of the individual ingredients and the formulation.
Routes of exposure: eye contact , skin contact

Acute Toxicity: (Species, Route, End Point, Dose)

Chlorhexidine acetate

Mouse	Oral	LD 50	2000 mg/kg
Rat	Oral	LD 50	(F) 1180 / (M) 1710 mg/kg
Rat	Inhalation	LC 50	0.10 - 0.46 mg/L
Rabbit	Dermal	LD 50	> 2000 mg/kg

Acute Toxicity Comments: A greater than symbol (>) indicates that the toxicity endpoint being tested was not achievable at the highest dose used in the test.

Inhalation Acute Toxicity May be harmful if inhaled. May cause respiratory tract and mucous membrane irritation.

Irritation / Sensitization: (Study Type, Species, Severity)

Chlorhexidine acetate

Skin Irritation	Rabbit	Mild
Eye Irritation	Rabbit	Severe
Skin Sensitization - GPMT	Guinea Pig	Negative

Irritation / Sensitization Comments: May cause eye irritation based on components.

Skin Irritation / Sensitization May cause mild skin irritation. based on components.

Repeated Dose Toxicity: (Duration, Species, Route, Dose, End Point, Target Organ)

Chlorhexidine acetate

13 Week(s)	Rabbit	Dermal	500 mg/kg/day	LOAEL	Liver, Skin
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Reproduction & Developmental Toxicity: (Study Type, Species, Route, Dose, End Point, Effect(s))

Chlorhexidine acetate

Embryo / Fetal Development	Rat	Oral	31.25 mg/kg/day	LOEL	Maternal toxicity
Embryo / Fetal Development	Rat	Oral	62.5 mg/kg/day	NOEL	No effects at maximum dose

Genetic Toxicity: (Study Type, Cell Type/Organism, Result)

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11. TOXICOLOGICAL INFORMATION

Chlorhexidine acetate

Mammalian Cell Mutagenicity Mouse Lymphoma Negative
In Vitro Cytogenetics Chinese Hamster Ovary (CHO) cells Negative
In Vivo Micronucleus Rat Hepatocyte Negative

Carcinogen Status: None of the components of this formulation are listed as a carcinogen by IARC, NTP or OSHA.

Product Level Toxicity Data

Inhalation ATE (Acute Toxicity Estimate), calculated 5 mg/l (dusts/mists)
Oral ATE (Acute Toxicity Estimate), calculated >5000 mg/kg

12. ECOLOGICAL INFORMATION

Environmental Overview: Environmental properties of the formulation have not been investigated. The following information is available for the individual ingredients. Releases to the environment should be avoided.

Toxicity:

Aquatic Toxicity: (Species, Method, End Point, Duration, Result)

Chlorhexidine acetate

<i>Oncorhynchus mykiss</i> (Rainbow Trout)	NA	LC50	96 Hours	1.9 ppm
<i>Lepomis macrochirus</i> (Bluegill Sunfish)	N/A	LC50	96 Hours	0.6 ppm
<i>Daphnia Magna</i> (Water Flea)	N/A	EC50	N/A	0.06 mg/L

Terrestrial Toxicity: (Species, Method, End Point, Duration, Result)

Chlorhexidine acetate

<i>Colinus virginianus</i> (Bobwhite Quail)	N/A	LD50	N/A	2013 mg/kg
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Persistence and Degradability: No data available

Bio-accumulative Potential: No data available

Mobility in Soil: No data available

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13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Dispose of waste in accordance with all applicable laws and regulations. Member State specific and Community specific provisions must be considered. Considering the relevant known environmental and human health hazards of the material, review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure and environmental release. It is recommended that waste minimization be practiced. The best available technology should be utilized to prevent environmental releases. This may include destructive techniques for waste and wastewater.

14. TRANSPORT INFORMATION

As of January 1, 2015, materials offered for transport that are classified for transportation only as Marine Pollutants and which are packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 Liters or less for liquids or having a net mass per single or inner packaging of 5 kilograms or less for solids are NOT subject to ICAO/IATA, IMDG, or ADR transport regulations provided the general packaging requirements of those regulations are met. Refer to ICAO/IATA A197, IMDG 2.10.2.7, ADR SP 375.

UN number:	UN 3082
UN proper shipping name:	Environmentally hazardous substances, liquid, n.o.s. (chlorhexidine acetate)
Transport hazard class(es):	9
Packing group:	III
Environmental Hazard(s):	Marine Pollutant

Please refer to the applicable dangerous goods regulations for additional information. Transport according to the requirements of the appropriate regulatory body.

DOT / ANTT: Not regulated for transportation

15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

Canada - WHMIS: Classifications

WHMIS hazard class:

Non-controlled

This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all of the information required by the CPR.

Chlorhexidine acetate

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15. REGULATORY INFORMATION

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
Australia (AICS):	Present
EU EINECS/ELINCS List	200-302-4

16. OTHER INFORMATION

Text of CLP/GHS Classification abbreviations mentioned in Section 3

Acute toxicity, oral-Cat.4; H302 - Harmful if swallowed
Acute toxicity, inhalation-Cat.2; H330 - Fatal if inhaled
Serious eye damage/eye irritation-Cat.2A; H319 - Causes serious eye irritation
Hazardous to the aquatic environment, acute toxicity-Cat.1; H400 - Very toxic to aquatic life
Hazardous to the aquatic environment, chronic toxicity-Cat.1; H410 - Very toxic to aquatic life with long lasting effects

Data Sources: The data contained in this SDS may have been gathered from confidential internal sources, raw material suppliers, or from the published literature.

Reasons for Revision: Updated Section 2 - Hazard Identification. Updated Section 3 - Composition / Information on Ingredients. Updated Section 11 - Toxicology Information. Updated Section 14 - Transport Information.

Prepared by: Toxicology and Hazard Communication
Zoetis Global Risk Management

Zoetis Inc. believes that the information contained in this Safety Data Sheet is accurate, and while it is provided in good faith, it is without warranty of any kind, expressed or implied. If data for a hazard are not included in this document there is no known information at this time.

End of Safety Data Sheet

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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

Product Identifier

Material Name: Nolvasan Solution

Trade Name: NOLVASAN®
Chemical Family: Mixture
Registration Number: EPA Reg. No. 1007-99

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Intended Use: Veterinary product used as disinfectant
Restrictions on Use: Not for human use

Details of the Supplier of the Safety Data Sheet

Zoetis Inc.
100 Campus Drive, P.O. Box 651
Florham Park, New Jersey 07932 (USA)
Rocky Mountain Poison and Drug Center Phone: 1-866-531-8896
Product Support/Technical Services Phone: 1-800-366-5288

Zoetis Belgium S.A.
Mercuriusstraat 20
1930 Zaventem
Belgium

Emergency telephone number:
CHEMTREC (24 hours): 1-800-424-9300
Contact E-Mail: VMIPSrecords@zoetis.com

Emergency telephone number:
International CHEMTREC (24 hours): +1-703-527-3887

2. HAZARDS IDENTIFICATION

Appearance: Clear blue liquid

Classification of the Substance or Mixture

GHS - Classification

Acute Toxicity - Dusts and Mists: Category 4
Acute aquatic toxicity: Category 2
Chronic aquatic toxicity: Category 2

Label Elements

Signal Word: Warning
Hazard Statements: H332 - Harmful if inhaled
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements: P271 - Use only outdoors or in a well-ventilated area
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P273 - Avoid release to the environment
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTRE/doctor/physician if you feel unwell
P391 - Collect spillage
P501 - Dispose of contents/container in accordance with all local and national regulations

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Other Hazards Short Term:

May cause eye irritation . Signs and symptoms might include redness, swelling, blurred vision or pain. May cause slight skin irritation. (based on components) May cause mucous membrane and respiratory tract irritation. Individuals sensitive to this chemical or other materials in its chemical class may develop allergic reactions.
Hazardous Substance. Non-Dangerous Goods.

Australian Hazard Classification (NOHSC):

Note: This document has been prepared in accordance with standards for workplace safety, which requires the inclusion of all known hazards of the product or its ingredients regardless of the potential risk. The precautionary statements and warning included may not apply in all cases. Your needs may vary depending upon the potential for exposure in your workplace.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous

Ingredient	CAS Number	EU EINECS/ELINCS List	GHS Classification	%
Chlorhexidine acetate	56-95-1	200-302-4	Acute Tox. 4 (H302) Acute Tox.2(H330) Eye Irrit.2A (H319) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	2

Additional Information: Ingredient(s) indicated as hazardous have been assessed under standards for workplace safety. In accordance with 29 CFR 1910.1200, the exact percentage composition of this mixture has been withheld as a trade secret.

For the full text of the CLP/GHS abbreviations mentioned in this Section, see Section 16

4. FIRST AID MEASURES

Description of First Aid Measures

Eye Contact: If irritation occurs or persists, get medical attention. Flush eyes with water for at least 15 minutes.

Skin Contact: Remove contaminated clothing and wash exposed area with soap and water. Obtain medical assistance if irritation occurs.

Ingestion: Never give anything by mouth to an unconscious person. Wash out mouth with water. Do not induce vomiting unless directed by medical personnel. Seek medical attention immediately.

Inhalation: Remove to fresh air and keep patient at rest. Seek medical attention immediately.

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Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms and Effects of Exposure:	For information on potential signs and symptoms of exposure, See Section 2 - Hazards Identification and/or Section 11 - Toxicological Information.
Medical Conditions Aggravated by Exposure:	None known

Indication of the Immediate Medical Attention and Special Treatment Needed

Notes to Physician: None

5. FIRE-FIGHTING MEASURES

Extinguishing Media: Extinguish fires with CO₂, extinguishing powder, foam, or water.

Special Hazards Arising from the Substance or Mixture

Hazardous Combustion Products: Formation of toxic gases is possible during heating or fire. May include oxides of carbon nitrogen and products of chlorine .

Fire / Explosion Hazards: Fine particles (such as dust and mists) may fuel fires/explosions.

Advice for Fire-Fighters

During all fire fighting activities, wear appropriate protective equipment, including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Ensure adequate ventilation. Personnel involved in clean-up should wear appropriate personal protective equipment (see Section 8). Minimize exposure.

Environmental Precautions

Place waste in an appropriately labeled, sealed container for disposal. Care should be taken to avoid environmental release.

Methods and Material for Containment and Cleaning Up

Measures for Cleaning / Collecting: Contain the source of spill if it is safe to do so. Collect spill with absorbent material. Clean spill area thoroughly.

Additional Consideration for Large Spills: Non-essential personnel should be evacuated from affected area. Report emergency situations immediately. Clean up operations should only be undertaken by trained personnel.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Use with adequate ventilation. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. When handling, use appropriate personal protective equipment (see Section 8). Wash thoroughly after handling. Releases to the environment should be avoided. Review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure or environmental releases. Potential points of process emissions of this material to the atmosphere should be controlled with dust collectors, HEPA filtration systems or other equivalent controls.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions: Store as directed by product packaging.

Incompatible Materials: Acids and bases , As a precautionary measure, keep away from strong oxidizers

Specific end use(s): No data available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

No Occupational Exposure Limit (OEL) or Short Term Exposure Limit (STEL) has been identified.

The purpose of the Occupational Exposure Band (OEB) classification system is to separate substances into different Hazard categories when the available data are sufficient to do so, but inadequate to establish an Occupational Exposure Limit (OEL). The OEB given is based upon an analysis of all currently available data; as such, this value may be subject to revision when new information becomes available.

Chlorhexidine acetate

Zoetis OEB

OEB 4 (control exposure to the range of 1ug/m³ to <10ug/m³)

Exposure Controls

Engineering Controls:

Engineering controls should be used as the primary means to control exposures. Keep airborne contamination levels within the OEB range. General room ventilation is adequate unless the process generates dust, mist or fumes.

Personal Protective Equipment:

Refer to applicable national standards and regulations in the selection and use of personal protective equipment (PPE).

Hands:

Impervious gloves are recommended if skin contact with drug product is possible and for bulk processing operations.

Eyes:

Wear safety glasses or goggles if eye contact is possible.

Skin:

Impervious protective clothing is recommended if skin contact with drug product is possible and for bulk processing operations.

Respiratory protection:

Whenever air contamination (mist, vapor or odor) is generated, respiratory protection is recommended as a precaution to minimize exposure. If airborne exposures are within or exceed the Occupational Exposure Band (OEB) range, wear an appropriate respirator with a protection factor sufficient to control exposures to the bottom of the OEB range.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:

Liquid

Color:

Blue

Odor:

Pleasant

Odor Threshold:

No data available.

Molecular Formula:

Mixture

Molecular Weight:

Mixture

Solvent Solubility:

No data available

Water Solubility:

Soluble

pH:

No data available.

Melting/Freezing Point (°C):

No data available

Boiling Point (°C):

No data available.

Partition Coefficient: (Method, pH, Endpoint, Value)

No data available

Decomposition Temperature (°C):

No data available.

Evaporation Rate (Gram/s):

No data available

Vapor Pressure (kPa):

No data available

Vapor Density (g/ml):

1.01

Relative Density:

No data available

Viscosity:

No data available

Flammability:

Autoignition Temperature (Solid) (°C):

No data available

Flammability (Solids):

No data available

Flash Point (Liquid) (°C):

No data available

Upper Explosive Limits (Liquid) (% by Vol.):

No data available

Lower Explosive Limits (Liquid) (% by Vol.):

No data available

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10. STABILITY AND REACTIVITY

Reactivity:	No data available
Chemical Stability:	Stable under normal conditions of use.
Possibility of Hazardous Reactions	
Oxidizing Properties:	No data available
Conditions to Avoid:	Fine particles (such as dust and mists) may fuel fires/explosions.
Incompatible Materials:	Acids and bases , As a precautionary measure, keep away from strong oxidizers
Hazardous Decomposition Products:	Toxic fumes of carbon monoxide, carbon dioxide, oxides of nitrogen, hydrogen chloride and other chlorine-containing compounds may be emitted.

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

General Information: Toxicological properties of the formulation have not been investigated. The information in this section describes the potential hazards of the individual ingredients and the formulation.
Routes of exposure: eye contact , skin contact

Acute Toxicity: (Species, Route, End Point, Dose)

Chlorhexidine acetate

Mouse	Oral	LD 50	2000 mg/kg
Rat	Oral	LD 50	(F) 1180 / (M) 1710 mg/kg
Rat	Inhalation	LC 50	0.10 - 0.46 mg/L
Rabbit	Dermal	LD 50	> 2000 mg/kg

Acute Toxicity Comments: A greater than symbol (>) indicates that the toxicity endpoint being tested was not achievable at the highest dose used in the test.

Inhalation Acute Toxicity May be harmful if inhaled. May cause respiratory tract and mucous membrane irritation.

Irritation / Sensitization: (Study Type, Species, Severity)

Chlorhexidine acetate

Skin Irritation	Rabbit	Mild
Eye Irritation	Rabbit	Severe
Skin Sensitization - GPMT	Guinea Pig	Negative

Irritation / Sensitization Comments: May cause eye irritation based on components.

Skin Irritation / Sensitization May cause mild skin irritation. based on components.

Repeated Dose Toxicity: (Duration, Species, Route, Dose, End Point, Target Organ)

Chlorhexidine acetate

13 Week(s)	Rabbit	Dermal	500 mg/kg/day	LOAEL	Liver, Skin
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Reproduction & Developmental Toxicity: (Study Type, Species, Route, Dose, End Point, Effect(s))

Chlorhexidine acetate

Embryo / Fetal Development	Rat	Oral	31.25 mg/kg/day	LOEL	Maternal toxicity
Embryo / Fetal Development	Rat	Oral	62.5 mg/kg/day	NOEL	No effects at maximum dose

Genetic Toxicity: (Study Type, Cell Type/Organism, Result)

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11. TOXICOLOGICAL INFORMATION

Chlorhexidine acetate

Mammalian Cell Mutagenicity Mouse Lymphoma Negative
In Vitro Cytogenetics Chinese Hamster Ovary (CHO) cells Negative
In Vivo Micronucleus Rat Hepatocyte Negative

Carcinogen Status: None of the components of this formulation are listed as a carcinogen by IARC, NTP or OSHA.

Product Level Toxicity Data

Inhalation ATE (Acute Toxicity Estimate), calculated 5 mg/l (dusts/mists)
Oral ATE (Acute Toxicity Estimate), calculated >5000 mg/kg

12. ECOLOGICAL INFORMATION

Environmental Overview: Environmental properties of the formulation have not been investigated. The following information is available for the individual ingredients. Releases to the environment should be avoided.

Toxicity:

Aquatic Toxicity: (Species, Method, End Point, Duration, Result)

Chlorhexidine acetate

<i>Oncorhynchus mykiss</i> (Rainbow Trout)	NA	LC50	96 Hours	1.9 ppm
<i>Lepomis macrochirus</i> (Bluegill Sunfish)	N/A	LC50	96 Hours	0.6 ppm
<i>Daphnia Magna</i> (Water Flea)	N/A	EC50	N/A	0.06 mg/L

Terrestrial Toxicity: (Species, Method, End Point, Duration, Result)

Chlorhexidine acetate

<i>Colinus virginianus</i> (Bobwhite Quail)	N/A	LD50	N/A	2013 mg/kg
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Persistence and Degradability: No data available

Bio-accumulative Potential: No data available

Mobility in Soil: No data available

SAFETY DATA SHEET

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13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Dispose of waste in accordance with all applicable laws and regulations. Member State specific and Community specific provisions must be considered. Considering the relevant known environmental and human health hazards of the material, review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure and environmental release. It is recommended that waste minimization be practiced. The best available technology should be utilized to prevent environmental releases. This may include destructive techniques for waste and wastewater.

14. TRANSPORT INFORMATION

As of January 1, 2015, materials offered for transport that are classified for transportation only as Marine Pollutants and which are packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 Liters or less for liquids or having a net mass per single or inner packaging of 5 kilograms or less for solids are NOT subject to ICAO/IATA, IMDG, or ADR transport regulations provided the general packaging requirements of those regulations are met. Refer to ICAO/IATA A197, IMDG 2.10.2.7, ADR SP 375.

UN number:	UN 3082
UN proper shipping name:	Environmentally hazardous substances, liquid, n.o.s. (chlorhexidine acetate)
Transport hazard class(es):	9
Packing group:	III
Environmental Hazard(s):	Marine Pollutant

Please refer to the applicable dangerous goods regulations for additional information. Transport according to the requirements of the appropriate regulatory body.

DOT / ANTT: Not regulated for transportation

15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

Canada - WHMIS: Classifications

WHMIS hazard class:

Non-controlled

This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all of the information required by the CPR.

Chlorhexidine acetate

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15. REGULATORY INFORMATION

CERCLA/SARA 313 Emission reporting	Not Listed
California Proposition 65	Not Listed
Australia (AICS):	Present
EU EINECS/ELINCS List	200-302-4

16. OTHER INFORMATION

Text of CLP/GHS Classification abbreviations mentioned in Section 3

Acute toxicity, oral-Cat.4; H302 - Harmful if swallowed
Acute toxicity, inhalation-Cat.2; H330 - Fatal if inhaled
Serious eye damage/eye irritation-Cat.2A; H319 - Causes serious eye irritation
Hazardous to the aquatic environment, acute toxicity-Cat.1; H400 - Very toxic to aquatic life
Hazardous to the aquatic environment, chronic toxicity-Cat.1; H410 - Very toxic to aquatic life with long lasting effects

Data Sources: The data contained in this SDS may have been gathered from confidential internal sources, raw material suppliers, or from the published literature.

Reasons for Revision: Updated Section 2 - Hazard Identification. Updated Section 3 - Composition / Information on Ingredients. Updated Section 11 - Toxicology Information. Updated Section 14 - Transport Information.

Prepared by: Toxicology and Hazard Communication
Zoetis Global Risk Management

Zoetis Inc. believes that the information contained in this Safety Data Sheet is accurate, and while it is provided in good faith, it is without warranty of any kind, expressed or implied. If data for a hazard are not included in this document there is no known information at this time.

End of Safety Data Sheet