SAFETY DATA SHEET
according to the Hazardous Products Regulations

Levamisole (6.5%) / Oxytoclanide (13%) Formulation

Version 2.2 Revision Date: 09/30/2023 SDS Number: 10857718-00005 Date of last issue: 04/04/2023 Date of first issue: 09/29/2022

SECTION 1. IDENTIFICATION

Product name: Levamisole (6.5%) / Oxytoclanide (13%) Formulation
Other means of identification: No data available

Manufacturer or supplier's details
Company name of supplier: Merck & Co., Inc
Address: 126 E. Lincoln Avenue
Rahway, New Jersey U.S.A. 07065
Telephone: 908-740-4000
Emergency telephone: 1-908-423-6000
E-mail address: EHSDATASTEWARD@merck.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 the Hazardous Products Regulations
Serious eye damage: Category 1
Reproductive toxicity: Category 2
Specific target organ toxicity - single exposure (Oral): Category 2 (Central nervous system)
Specific target organ toxicity - repeated exposure: Category 2 (Brain, Liver)
Specific target organ toxicity - repeated exposure (Oral): Category 2 (Blood, Testis)

GHS label elements
Hazard pictograms: 

Signal Word: Danger
Hazard Statements: H318 Causes serious eye damage.
H361d Suspected of damaging the unborn child.
H371 May cause damage to organs (Central nervous system) if swallowed.
H373 May cause damage to organs (Brain, Liver) through prolonged or repeated exposure.
H373 May cause damage to organs (Blood, Testis) through prolonged or repeated exposure if swallowed.
Precautionary Statements

**Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves, protective clothing, eye protection and face protection.

**Response:**
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.
P308 + P311 IF exposed or concerned: Call a doctor.

**Storage:**
P405 Store locked up.

**Disposal:**
P501 Dispose of contents and container to an approved waste disposal plant.

Other hazards
None known.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Mixture</th>
</tr>
</thead>
</table>

#### Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common Name/Synonym</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxytoclanide</td>
<td>3,3',5,5',6'-Pentachloro-2'-hydroxy salicylanilide</td>
<td>2277-92-1</td>
<td>13</td>
</tr>
<tr>
<td>Silicic acid, aluminum salt</td>
<td>No data available</td>
<td>1335-30-4</td>
<td>6.51</td>
</tr>
<tr>
<td>Levamisole hydrochloride</td>
<td>No data available</td>
<td>16595-80-5</td>
<td>6.5</td>
</tr>
<tr>
<td>Citric acid</td>
<td>2-hydroxy propane-1,2,3-tricarboxylic acid</td>
<td>77-92-9</td>
<td>1.77</td>
</tr>
</tbody>
</table>

### SECTION 4. FIRST AID MEASURES
SAFETY DATA SHEET
according to the Hazardous Products Regulations

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General advice: In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice.

If inhaled: If inhaled, remove to fresh air. Get medical attention.

In case of skin contact: In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. 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. If easy to do, remove contact lens, if worn. Get medical attention immediately.

If swallowed: If swallowed, DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Causes serious eye damage. Suspected of damaging the unborn child. May cause damage to organs if swallowed. May cause damage to organs through prolonged or repeated exposure.

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

Notes to physician: Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)

Unsuitable extinguishing media: None known.

Specific hazards during firefighting: Exposure to combustion products may be a hazard to health.

Hazardous combustion products: Carbon oxides
Chlorine compounds
Nitrogen oxides (NOx)

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

Special protective equipment for fire-fighters: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.
**SECTION 6. ACCIDENTAL RELEASE MEASURES**

| Personal precautions, protective equipment and emergency procedures | Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8). |
| Environmental precautions | Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g., by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spills cannot be contained. |
| Methods and materials for containment and cleaning up | Soak up with inert absorbent material. 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. Clean up remaining materials from spill with suitable absorbent. 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. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements. |

**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 | Do not breathe mist or vapors. Do not swallow. Do not get in eyes. Avoid prolonged or repeated contact with skin. Wash skin thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment. Keep container tightly closed. Do not eat, drink or smoke when using this product. Take care to prevent spills, waste and minimize release to the environment. |
| Conditions for safe storage | Keep in properly labeled containers. Store locked up. Keep tightly closed. Store in accordance with the particular national regulations. |
| Materials to avoid | Do not store with the following product types: Strong oxidizing agents |
SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxyclozanide</td>
<td>2277-92-1</td>
<td>TWA</td>
<td>0.4 mg/m³ (OEB 2)</td>
<td>Internal</td>
</tr>
<tr>
<td>Silicic acid, aluminum salt</td>
<td>1335-30-4</td>
<td>TWA</td>
<td>2 mg/m³ (Aluminum)</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>5 mg/m³ (respirable dust)</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td>Levamisole hydrochloride</td>
<td>16595-80-5</td>
<td>TWA</td>
<td>20 µg/m³ (OEB 3)</td>
<td>Internal</td>
</tr>
<tr>
<td>Further information: Skin</td>
<td></td>
<td>Wipe limit</td>
<td>200 µg/100 cm²</td>
<td>Internal</td>
</tr>
</tbody>
</table>

Engineering measures

Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., dripless 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

If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type: Particulates type

Hand protection

Material: Chemical-resistant gloves

Remarks: Consider double gloving.

Eye protection

If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles. Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

Skin and body protection

Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets,
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Hygiene measures:
- If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.
- When using do not eat, drink or smoke.
- Wash contaminated clothing before re-use.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>suspension</td>
</tr>
<tr>
<td>Color</td>
<td>yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (liquids)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit / Lower flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
</tr>
</tbody>
</table>
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 size : Not applicable

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: > 2,000 mg/kg
Method: Calculation method

Components:
Oxyclozanide:
### Acute oral toxicity

- **Levamisole (6.5%) / Oxyclozanide (13%) Formulation**

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat</td>
<td>3,519 mg/kg</td>
</tr>
</tbody>
</table>

**Target Organs:** Central nervous system

**Acute toxicity (other routes of administration)**

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheep</td>
<td>10 mg/kg</td>
</tr>
</tbody>
</table>

**Application Route:** Intravenous

**Silicic acid, aluminum salt:**

- **Acute oral toxicity**
  - LD50 (Rat, female): > 2,000 mg/kg
  - Method: OECD Test Guideline 423
  - Assessment: The substance or mixture has no acute oral toxicity

**Acute dermal toxicity**

- LD50 (Rabbit): > 5,000 mg/kg
- Remarks: Based on data from similar materials

**Levamisole hydrochloride:**

- **Acute oral toxicity**
  - LD50 (Rat): 180 mg/kg
  - LD50 (Mouse): 223 mg/kg
  - LD50 (Rabbit): 458 mg/kg

**Acute inhalation toxicity**

- Remarks: No data available

**Acute dermal toxicity**

- Remarks: No data available

**Citric acid:**

- **Acute oral toxicity**
  - LD50 (Mouse): 5,400 mg/kg

**Acute dermal toxicity**

- LD50 (Rat): > 2,000 mg/kg
  - Method: OECD Test Guideline 402
  - Assessment: The substance or mixture has no acute dermal toxicity

**Skin corrosion/irritation**

- Not classified based on available information.

**Components:**

- **Oxyclozanide:**
  - Remarks: Not classified due to lack of data.

- **Silicic acid, aluminum salt:**
  - **Species:** Rabbit
  - **Method:** OECD Test Guideline 404
  - **Result:** No skin irritation
  - **Remarks:** Based on data from similar materials

**Levamisole hydrochloride:**
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Remarks:

Citric acid:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Serious eye damage/eye irritation
Causes serious eye damage.

Components:

OxyClozanide:
Remarks: Not classified due to lack of data.

Silicic acid, aluminum salt:
Species: Chicken eye
Method: Chorioallantoic membrane vascularization assay
Result: Irreversible effects on the eye

Levamisole hydrochloride:
Remarks: No data available

Citric acid:
Species: Rabbit
Result: Irritation to eyes, reversing within 21 days
Method: OECD Test Guideline 405

Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Components:

OxyClozanide:
Routes of exposure: Dermal
Remarks: Not classified due to lack of data.

Silicic acid, aluminum salt:
Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
<table>
<thead>
<tr>
<th>Components:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Levamisole hydrochloride:</strong></td>
<td>Remarks: No data available</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified based on available information.</td>
</tr>
</tbody>
</table>

**Components:**

**Oxyclozanide:**

| Genotoxicity in vitro | Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative  
Test Type: Chromosomal aberration  
Test system: Human lymphocytes  
Result: positive  
Test Type: Mouse Lymphoma  
Result: positive |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Germ cell mutagenicity - Assessment</td>
<td>Weight of evidence does not support classification as a germ cell mutagen.</td>
</tr>
</tbody>
</table>

**Silicic acid, aluminum salt:**

| Genotoxicity in vitro | Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative  
Test Type: Chromosome aberration test in vitro  
Result: negative  
Remarks: Based on data from similar materials |
|----------------------|--------------------------------------------------------------------------------------------------|
| Genotoxicity in vivo | Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials |
Levamisole hydrochloride:
Genotoxicity in vitro:
- Test Type: Bacterial reverse mutation assay (AMES)
  Result: negative
- Test Type: Chromosome aberration test in vitro
  Result: negative

Citric acid:
Genotoxicity in vitro:
- Test Type: Bacterial reverse mutation assay (AMES)
  Result: negative
- Test Type: In vitro micronucleus test
  Result: positive
- Test Type: Bacterial reverse mutation assay (AMES)
  Result: negative

Genotoxicity in vivo:
- Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
  Species: Rat
  Application Route: Ingestion
  Result: negative

Carcinogenicity
Not classified based on available information.

Components:

Oxyclozanide:
Remarks: Not classified due to lack of data.

Silicic acid, aluminum salt:
Species: Rat
Application Route: Ingestion
Exposure time: 104 weeks
Result: negative
Remarks: Based on data from similar materials

Levamisole hydrochloride:
Species: Mouse
Application Route: Oral
Exposure time: 2 Years
NOAEL: 80 mg/kg body weight
Remarks: No significant adverse effects were reported

Species: Rat
Application Route: Oral
Exposure time: 2 Years
NOAEL: 40 mg/kg body weight
Remarks: No significant adverse effects were reported
Reproductive toxicity
Suspected of damaging the unborn child.

Components:

Oxyclozanide:
Effects on fertility:
- Test Type: Two-generation reproduction toxicity study
  - Species: Rat, male and female
  - Application Route: Oral
  - General Toxicity Parent: NOAEL: 25 - 35 mg/kg body weight
  - Symptoms: Reduced body weight, No effects on embryofetal and postnatal development.
  - Result: No effects on fertility.

- Test Type: Two-generation reproduction toxicity study
  - Species: Rat
  - Application Route: Oral
  - General Toxicity Parent: LOAEL: 75 - 100 mg/kg body weight
  - Symptoms: Reduced body weight, No effects on embryofetal and postnatal development.
  - Result: No effects on fertility.

- Test Type: Two-generation reproduction toxicity study
  - Species: Rat
  - Application Route: Oral
  - Early Embryonic Development: LOAEL: 75 - 100 mg/kg body weight
  - Result: No fetotoxicity., No teratogenic effects.

- Test Type: One-generation reproduction toxicity study
  - Species: Rat
  - Application Route: Oral
  - General Toxicity Parent: LOAEL: 80 - 160 mg/kg body weight
  - Result: No fetotoxicity., No teratogenic effects., No effects on fertility.

Effects on fetal development:
- Test Type: Development
  - Species: Rat
  - Application Route: Oral
  - Developmental Toxicity: NOAEL: 200 mg/kg body weight
  - Result: No fetotoxicity., No teratogenic effects.

- Test Type: Development
  - Species: Rat
  - Application Route: Oral
  - General Toxicity Maternal: LOAEL: 100 mg/kg body weight
  - Result: No fetotoxicity., No teratogenic effects.

- Test Type: Development
  - Species: Rabbit
  - Application Route: Oral
Developmental Toxicity: NOAEL: 32 mg/kg body weight
Result: Fetotoxicity., Skeletal malformations.

Reproductive toxicity - Assessment: Suspected of damaging the unborn child.

Silicic acid, aluminum salt:
Effects on fetal development: Test Type: Embryo-fetal development
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Levamisole hydrochloride:
Effects on fertility: Test Type: Three-generation reproduction toxicity study
Species: Rat
Application Route: Oral
Result: No significant adverse effects were reported

Effects on fetal development: Test Type: Embryo-fetal development
Species: Rat
Application Route: Oral
Developmental Toxicity: NOAEL: 20 mg/kg body weight
Result: Fetotoxicity.

Test Type: Embryo-fetal development
Species: Rabbit
Application Route: Oral
Developmental Toxicity: LOAEL: 40 mg/kg body weight
Result: Fetotoxicity.

Reproductive toxicity - Assessment: Some evidence of adverse effects on development, based on animal experiments.

Citric acid:
Effects on fetal development: Test Type: One-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative

STOT-single exposure
May cause damage to organs (Central nervous system) if swallowed.

Components:

Oxyclozanide:
Routes of exposure: Oral
Target Organs: Central nervous system
Assessment: May cause damage to organs.
Citric acid:
Assessment : May cause respiratory irritation.

STOT-repeated exposure
May cause damage to organs (Brain, Liver) through prolonged or repeated exposure.
May cause damage to organs (Blood, Testis) through prolonged or repeated exposure if swallowed.

Components:

Oxyclozanide:
Target Organs : Brain, Liver
Assessment : May cause damage to organs through prolonged or repeated exposure.

Levamisole hydrochloride:
Target Organs : Blood, Testis
Assessment : May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

Oxyclozanide:
Species : Rat
NOAEL : 9 mg/kg
LOAEL : 44.5 mg/kg
Application Route : Oral
Exposure time : 3 Months
Target Organs : Brain, Liver, spleen, Adrenal gland
Symptoms : Liver effects

Species : Dog
NOAEL : 5 mg/kg
LOAEL : 25 mg/kg
Application Route : Oral
Exposure time : 3 Months
Target Organs : Brain, Liver
Symptoms : blood effects, alteration in liver enzymes

Silicic acid, aluminum salt:
Species : Rat
NOAEL : > 100 mg/kg
Application Route : Ingestion
Exposure time : 104 Weeks
Remarks : Based on data from similar materials
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<thead>
<tr>
<th>Version</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2.2</td>
<td>09/30/2023</td>
<td>10857718-00005</td>
<td>04/04/2023</td>
<td>09/29/2022</td>
</tr>
</tbody>
</table>

**Levamisole hydrochloride:**
Species: Rat  
NOAEL: 2.5 mg/kg  
Application Route: Oral  
Exposure time: 18 Months  
Target Organs: Testis

Species: Dog  
LOAEL: 20 mg/kg  
Application Route: Oral  
Exposure time: 18 Months  
Target Organs: Blood

Species: Dog  
LOAEL: 40 mg/kg  
Application Route: Oral  
Exposure time: 3 Months

**Citric acid:**
Species: Rat  
NOAEL: 4,000 mg/kg  
LOAEL: 8,000 mg/kg  
Application Route: Ingestion  
Exposure time: 10 Days

**Aspiration toxicity**
Not classified based on available information.

**Components:**

**Oxyclozanide:**
Not applicable

**Experience with human exposure**

**Components:**

**Oxyclozanide:**
Ingestion: Symptoms: May cause, Gastrointestinal disturbance, Central nervous system depression

**Levamisole hydrochloride:**
Ingestion: Symptoms: Nausea, Vomiting, Headache, Dizziness, hypotension
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Oxyclozanide:
Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 0.69 mg/l Exposure time: 48 h Method: OECD Test Guideline 202

Silicic acid, aluminum salt:
Ecotoxicology Assessment
Chronic aquatic toxicity: No toxicity at the limit of solubility.

Levamisole hydrochloride:
Toxicity to fish: LC50 (Oryzias latipes (Japanese medaka)): 37.3 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 64 mg/l Exposure time: 48 h Method: OECD Test Guideline 202

Citric acid:
Toxicity to fish: LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 1,535 mg/l Exposure time: 24 h

Persistence and degradability

Components:

Oxyclozanide:
Stability in water: Hydrolysis: 50 % (156 d) Method: OECD Test Guideline 111

Citric acid:
Bioaccumulative potential

**Components:**

**Oxyclozanide:**
Partition coefficient: n-octanol/water : log Pow: 3.99  
  pH: 7  
  Method: OECD Test Guideline 107

**Citric acid:**
Partition coefficient: n-octanol/water : log Pow: -1.72

Mobility in soil

**Components:**

**Oxyclozanide:**
Distribution among environmental compartments : log Koc: 4.83  
  Method: OECD Test Guideline 106

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**

**UNRTDG**
UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
  (oxyclozanide)
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.  
  (Oxyclozanide)
Class : 9
Levamisole (6.5%) / Oxyclozanide (13%) Formulation

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. (Oxyclozanide)
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

TDG
UN number: UN 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Oxyclozanide)
Class: 9
Packing group: III
Labels: 9
ERG Code: 171
Marine pollutant: yes (Oxyclozanide)

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.

SECTION 15. REGULATORY INFORMATION

The ingredients of this product are reported in the following inventories:
AICS: not determined
DSL: not determined
IECSC: not determined
Levamisole (6.5%) / Oxytocianide (13%) Formulation

SECTION 16. OTHER INFORMATION

Full text of other abbreviations
CA QC OEL : Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
CA AB OEL / TWA : 8-hour Occupational exposure limit
CA QC OEL / TWAEV : Time-weighted average exposure value

All 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 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

Sources of key data used to compile the Material Safety Data Sheet :

Revision Date : 09/30/2023
Date format : mm/dd/yyyy
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.

CA / Z8