1 Identification

- Product identifier
  - Trade name: Niclosamide (ethanolamine salt)
  - Article number: 17118
  - CAS Number: 1420-04-8
  - EC number: 215-811-7
  - Application of the substance / the mixture
    This product is for research use - Not for human or veterinary diagnostic or therapeutic use.

- Details of the supplier of the safety data sheet
  - Manufacturer/Supplier: Cayman Chemical Co.
    1180 E. Ellsworth Rd.
    Ann Arbor, MI 48108
    USA
  - Information department: Product safety department
  - Emergency telephone number:
    During normal opening times: +1 (734) 971-3335
    US/CANADA: 800-424-9300
    Outside US/CANADA: 703-741-5970

2 Hazard(s) identification

- Classification of the substance or mixture

  - GHS09 Environment
    Aquatic Acute 1 H400 Very toxic to aquatic life.
    Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

  - GHS07
    Eye Irritation 2A H319 Causes serious eye irritation.

- Label elements

- GHS label elements
  The substance is classified and labeled according to the Globally Harmonized System (GHS).
Trade name: Niclosamide (ethanolamine salt)

· Hazard pictograms
  ![Pictograms: GHS07 GHS09]

· Signal word Warning
· Hazard statements
  H319 Causes serious eye irritation.
  H410 Very toxic to aquatic life with long lasting effects.
· Precautionary statements
  P264 Wash thoroughly after handling.
  P273 Avoid release to the environment.
  P280 Wear eye protection / face protection.
  P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P337+P313 If eye irritation persists: Get medical advice/attention.
  P391 Collect spillage.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
· Classification system:
· NFPA ratings (scale 0 - 4)
  ![NFPA Rating: Health = 2 Fire = 0 Reactivity = 0]
  Health = 2
  Fire = 0
  Reactivity = 0
· HMIS-ratings (scale 0 - 4)
  ![HMIS Rating: Health = 2 Fire = 0 Reactivity = 0]
  Health = 2
  Fire = 0
  Reactivity = 0
· Other hazards
· Results of PBT and vPvB assessment
  · PBT: Not applicable.
  · vPvB: Not applicable.

3 Composition/information on ingredients
· Chemical characterization: Substances
· CAS No. Description
  1420-04-8 Niclosamide (ethanolamine salt)
· Identification number(s)
  EC number: 215-811-7

4 First-aid measures
· Description of first aid measures
  · After inhalation: Supply fresh air; consult doctor in case of complaints.
  · After skin contact: Generally the product does not irritate the skin.
5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents: Use fire fighting measures that suit the environment. A solid water stream may be inefficient.
  - Special hazards arising from the substance or mixture No further relevant information available.
- Advice for firefighters
  - Protective equipment: No special measures required.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures Not required.
- Environmental precautions:
  - Inform respective authorities in case of seepage into water course or sewage system.
  - Do not allow to enter sewers/surface or ground water.
- Methods and material for containment and cleaning up: Pick up mechanically.
- Reference to other sections
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.
- Protective Action Criteria for Chemicals
  - PAC-1: Substance is not listed.
  - PAC-2: Substance is not listed.
  - PAC-3: Substance is not listed.

7 Handling and storage

- Handling:
  - Precautions for safe handling
    - No special precautions are necessary if used correctly.
    - Avoid breathing dust/fume/gas/mist/vapours/spray.
    - Avoid prolonged or repeated exposure.
    - Keep away from sources of ignition.
    - Take precautionary measures against static discharge.
  - Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities
  - Storage: Store in accordance with information listed on the product insert.
  - Requirements to be met by storerooms and receptacles: No special requirements.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions: Keep receptacle tightly sealed.
8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
- Components with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists that were valid during the creation were used as basis.

- Exposure controls
- Personal protective equipment:
- General protective and hygienic measures:
  Keep away from foodstuffs, beverages and feed.
  Immediately remove all soiled and contaminated clothing.
  Wash hands before breaks and at the end of work.
  Avoid contact with the eyes.
  Avoid contact with the eyes and skin.
- Breathing equipment: Not required.
- Protection of hands:
  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
  Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- Material of gloves
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- Penetration time of glove material
  The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- Eye protection:

Tightly sealed goggles

9 Physical and chemical properties

- Information on basic physical and chemical properties
  - General Information
  - Appearance:
    - Form: Solid
    - Color: White
    - Odor: Characteristic
    - Molecular Weight: 388.2 g/mol
    - Odor threshold: Not determined.
  - pH-value: Not applicable.
- Change in condition
  - Melting point/Melting range: Undetermined.
### Trade name: Niclosamide (ethanolamine salt)

#### 56.0.10

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling point/Boiling range:</td>
<td>Undetermined</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gaseous)</td>
<td>Product is not flammable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not determined</td>
</tr>
<tr>
<td>Auto igniting</td>
<td>Not determined</td>
</tr>
<tr>
<td>Danger of explosion</td>
<td>Product does not present an explosion hazard</td>
</tr>
<tr>
<td>Explosion limits</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>Not determined</td>
</tr>
<tr>
<td>Upper</td>
<td>Not determined</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Density</td>
<td>Not determined</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not determined</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility in / Miscibility with</td>
<td>Water: No determined.</td>
</tr>
<tr>
<td>DMF</td>
<td></td>
</tr>
<tr>
<td>DMSO:PBS (pH 7.2) (1:1)</td>
<td>0.5 mg/mL</td>
</tr>
<tr>
<td>Ethanol</td>
<td>0.25 mg/mL</td>
</tr>
<tr>
<td>DMSO</td>
<td>30 mg/mL</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Dynamic</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not applicable</td>
</tr>
<tr>
<td>SOLUBILITY</td>
<td>DMF: 30 mg/mL; DMSO:PBS (pH 7.2) (1:1): 0.5 mg/mL; Ethanol: 0.25 mg/mL; DMSO: 30 mg/mL</td>
</tr>
<tr>
<td>Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

#### 10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **Chemical stability**
  - **Thermal decomposition / conditions to be avoided**: No decomposition if used according to specifications.
  - **Possibility of hazardous reactions**: No dangerous reactions known.
  - **Conditions to avoid**: No further relevant information available.
  - **Incompatible materials**: strong oxidizing agents
  - **Hazardous decomposition products**: carbon dioxide, carbon monoxide, hydrogen chloride, nitrogen oxides

#### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**:
  - **LD/LC50 values that are relevant for classification**:
    | Route       | LD50/C50 | Value (unit) |
    |-------------|----------|--------------|
    | Oral        | LD50     | 500 mg/kg (rat) |
    | Intraperitoneal | LD50   | 250 mg/kg (rat) |
Trade name: Niclosamide (ethanolamine salt)

· Primary irritant effect:
  · on the skin: No irritant effect.
  · on the eye: Irritating effect.
· Sensitization: No sensitizing effects known.
· Additional toxicological information:
  · Carcinogenic categories
    - IARC (International Agency for Research on Cancer) Substance is not listed.
    - NTP (National Toxicology Program) Substance is not listed.
    - OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.

12 Ecological information

· Toxicity
  · Aquatic toxicity: No further relevant information available.
  · Persistence and degradability No further relevant information available.
· Behavior in environmental systems:
  · Bioaccumulative potential No further relevant information available.
  · Mobility in soil No further relevant information available.
  · Ecotoxicological effects:
    · Remark: Very toxic for fish
· Additional ecological information:
  · General notes:
    Water hazard class 3 (Assessment by list): extremely hazardous for water
    Do not allow product to reach ground water, water course or sewage system, even in small quantities.
    Danger to drinking water if even extremely small quantities leak into the ground.
    Also poisonous for fish and plankton in water bodies.
    Very toxic for aquatic organisms
  · Results of PBT and vPvB assessment
    · PBT: Not applicable.
    · vPvB: Not applicable.
    · Other adverse effects No further relevant information available.

13 Disposal considerations

· Waste treatment methods
  · Recommendation:
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
· Uncleaned packagings:
  · Recommendation: Disposal must be made according to official regulations.

14 Transport information

· UN-Number
  · DOT, IMDG, IATA UN3077
<table>
<thead>
<tr>
<th><strong>UN proper shipping name</strong></th>
<th>Environmentally hazardous substance, solid, n.o.s. (Niclosamide (ethanolamine salt))</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOT, IATA</strong></td>
<td>9 Miscellaneous dangerous substances and articles</td>
</tr>
<tr>
<td><strong>IMDG</strong></td>
<td>9 Miscellaneous dangerous substances and articles</td>
</tr>
</tbody>
</table>

**Transport hazard class(es)**

<table>
<thead>
<tr>
<th><strong>DOT</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Transport Hazard Class 9" /></td>
</tr>
<tr>
<td><strong>Class</strong></td>
</tr>
<tr>
<td>9 Miscellaneous dangerous substances and articles</td>
</tr>
<tr>
<td><strong>Label</strong></td>
</tr>
<tr>
<td>9</td>
</tr>
</tbody>
</table>

**IMDG, IATA**

| ![Transport Hazard Class 9](image) |
| **Class** |
| 9 Miscellaneous dangerous substances and articles |
| **Label** |
| 9 |

**Packing group**

<table>
<thead>
<tr>
<th><strong>DOT, IMDG, IATA</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>III</td>
</tr>
</tbody>
</table>

**Environmental hazards:**

| **Marine pollutant:** |
| Symbol (fish and tree) |
| **Special marking (IATA):** |
| Symbol (fish and tree) |

**Special precautions for user**

**Warning:** Miscellaneous dangerous substances and articles

| **Hazard identification number (Kemler code):** |
| 90 |
| **EMS Number:** |
| F-A,S-F |
| **Stowage Category** |
| A |
| **Stowage Code** |
| SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9. |

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

**Transport/Additional information:**

| **DOT** |
| Quantity limitations |
| On passenger aircraft/rail: 400 kg |
| On cargo aircraft only: 400 kg |

| **IMDG** |
| Limited quantities (LQ) |
| 5 kg |
| Exected quantities (EQ) |
| Code: E1 |
| Maximum net quantity per inner packaging: 30 g |
| Maximum net quantity per outer packaging: 1000 g |

| **IATA** |
| Remarks: |
| When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis |
Trade name: Niclosamide (ethanolamine salt)

- Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.
- UN "Model Regulation": UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (NICLOSAMIDE (ETHANOLAMINE SALT)), 9, III

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  No further relevant information available.
- Sara
- Section 355 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is not listed.
- TSCA (Toxic Substances Control Act): Substance is not listed.
- Hazardous Air Pollutants Substance is not listed.
- Proposition 65
- Chemicals known to cause cancer: Substance is not listed.
- Chemicals known to cause reproductive toxicity for females: Substance is not listed.
- Chemicals known to cause reproductive toxicity for males: Substance is not listed.
- Chemicals known to cause developmental toxicity: Substance is not listed.
- Carcinogenic categories
- EPA (Environmental Protection Agency) Substance is not listed.
- TLV (Threshold Limit Value) Substance is not listed.
- NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

- Department issuing SDS: Environment protection department.
- Contact: -
- Date of preparation / last revision 02/09/2023
- Abbreviations and acronyms:
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  EINECS: European Inventory of Existing Commercial Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NPF: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  NIOSH: National Institute for Occupational Safety
Trade name: Niclosamide (ethanolamine salt)

OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1