SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition

Version: 1.0
Creation Date: Aug 15, 2017
Revision Date: Aug 15, 2017

1. Identification

1.1 GHS Product identifier

Product name: niclosamide-olamine

1.2 Other means of identification

Product number: -
Other names: NICLOSAMIDEL

1.3 Recommended use of the chemical and restrictions on use

Identified uses: For industry use only. Molluscicide
Uses advised against: no data available

2. Hazard identification

2.1 Classification of the substance or mixture

Eye irritation, Category 2

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)
Signal word | Warning
---|---
Hazard statement(s) | H319 Causes serious eye irritation
| H400 Very toxic to aquatic life
| H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s) | Prevention
---|---
P264 Wash ... thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P273 Avoid release to the environment.

Response | P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
P391 Collect spillage.

Storage | none

Disposal | P501 Dispose of contents/container to ...

2.3 Other hazards which do not result in classification
| none

3. Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common names and synonyms</th>
<th>CAS number</th>
<th>EC number</th>
<th>Concentration</th>
</tr>
</thead>
</table>
| niclosamide-olamine | niclosamide-olamine | 1420-04-8 | none | 100%

4. First-aid measures
4.1 Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms/effects, acute and delayed

no data available

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Absorption, Distribution and Excretion

WHOLE BODY RESIDUES WERE LOW IN INVERTEBRATES EXPOSED TO (14)C-BAYLUSCIDE (1 UG/L). WITHIN 48 HR, INVERTEBRATES (DAPHNIDS, SOWBUGS, SCUDS, GLASS SHRIMP, CRAYFISH, DAMSELFLY LARVAE, AND MIDGE LARVAE) REACHED PLATEAUS WHICH WERE 4 TO 87 TIMES THAT OF THE CONCNS TO WHICH THEY WERE EXPOSED. A 50% REDUCTION IN THESE RESIDUES OCCURRED WITHIN 24 HR AFTER THE ORGANISMS WERE TRANSFERRED TO FRESH WATER.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
This compound is not very flammable but any fire involving this compound may produce dangerous vapors. You should evacuate the area. All firefighters should wear full-body protective clothing and use self-contained breathing apparatuses. You should extinguish any fires involving this chemical with a dry chemical, carbon dioxide, foam, or halon extinguisher.

5.2 Specific hazards arising from the chemical

Flash point data for this chemical are not available. It is probably combustible.

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in original container, preferably in locked area, away from children, food, feed.
8. Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards

no data available

9. Physical and chemical properties
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>yellow solid</td>
</tr>
<tr>
<td>Colour</td>
<td>BRIGHT YELLOW, CRYSTALLINE</td>
</tr>
<tr>
<td>Odour</td>
<td>no data available</td>
</tr>
<tr>
<td>Melting point/ freezing point</td>
<td>91-93 °C (lit.)</td>
</tr>
<tr>
<td>Boiling point or initial boiling point and boiling range</td>
<td>155-156 °C</td>
</tr>
<tr>
<td>Flammability</td>
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<td>Lower and upper explosion limit / flammability limit</td>
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<tr>
<td>Flash point</td>
<td>149 °F</td>
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<tr>
<td>Auto-ignition temperature</td>
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<tr>
<td>Decomposition temperature</td>
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</tr>
<tr>
<td>pH</td>
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</tr>
<tr>
<td>Kinematic viscosity</td>
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</tr>
<tr>
<td>Solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Partition coefficient n-octanol/water (log value)</td>
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</tr>
<tr>
<td>Vapour pressure</td>
<td>&lt;1X10-7 mbar @ 20°C (7.5X10-8 mm Hg)</td>
</tr>
<tr>
<td>Density and/or relative density</td>
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</tr>
<tr>
<td>Relative vapour density</td>
<td>no data available</td>
</tr>
<tr>
<td>Particle characteristics</td>
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</tr>
</tbody>
</table>

10. Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

ETHANOLAMINE SALT IS HIGHLY STABLE TO HEAT & IS HYDROLYZED ONLY BY HOT STRONG ACIDS & ALKALIES

10.3 Possibility of hazardous reactions

CLONITRALID is hydrolyzed by concentrated acid or alkali.
10.4 Conditions to avoid

- no data available

10.5 Incompatible materials

- no data available

10.6 Hazardous decomposition products

- no data available

11. Toxicological information

Acute toxicity

- Oral: LD50 Rat oral >5000 mg/kg
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

- no data available

Serious eye damage/irritation

- no data available

Respiratory or skin sensitization

- no data available

Germ cell mutagenicity

- no data available

Carcinogenicity

- no data available

Reproductive toxicity

- no data available

STOT-single exposure

- no data available
12. Ecological information

12.1  Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2  Persistence and degradability

In laboratory experiments, the free amide was found to be persistent in muds for over a year under tropical conditions (full sunlight, heavy rainfall, temperature 20-30°C, and relative humidity of 70-95%)(1). However, clonitralide is rapidly degraded in pond sediment with a half-life of 1.1-2.9 days(2).

12.3  Bioaccumulative potential

An estimated BCF value of 46 was calculated for clonitralide(SRC), using an experimental water solubility of 100 mg/L(1) and a recommended regression-derived equation(2). According to a classification scheme(3), this BCF value suggests that bioconcentration in aquatic organisms will be moderate, not high(SRC).

12.4  Mobility in soil

The Koc of clonitralide is estimated as approximately 350(SRC), using an experimental water solubility of 100 mg/L(1) and a regression-derived equation(2,SRC). According to a recommended classification scheme(3), this estimated Koc value suggests that clonitralide has medium mobility in soil(SRC).

12.5  Other adverse effects

no data available

13. Disposal considerations
13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. Transport information

14.1 UN Number

ADR/RID: UN1325
IMDG: UN1325
IATA: UN1325

14.2 UN Proper Shipping Name

ADR/RID: FLAMMABLE SOLID, ORGANIC, N.O.S.
IMDG: FLAMMABLE SOLID, ORGANIC, N.O.S.
IATA: FLAMMABLE SOLID, ORGANIC, N.O.S.

14.3 Transport hazard class(es)

ADR/RID: 4.1
IMDG: 4.1
IATA: 4.1

14.4 Packing group, if applicable

ADR/RID: II
IMDG: II
IATA: II

14.5 Environmental hazards

ADR/RID: yes
IMDG: yes
IATA: yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
15. Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

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<td>niclosamide-olamine</td>
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<td>1420-04-8</td>
<td>none</td>
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<tr>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
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<tr>
<td>EC Inventory</td>
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<td>United States Toxic Substances Control Act (TSCA) Inventory</td>
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<td>China Catalog of Hazardous chemicals 2015</td>
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<td>New Zealand Inventory of Chemicals (NZIoC)</td>
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<td>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</td>
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<td>Vietnam National Chemical Inventory</td>
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<td>Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)</td>
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16. Other information

Information on revision

Creation Date    Aug 15, 2017
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Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
LC50: Lethal Concentration 50%
LD50: Lethal Dose 50%
EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.