U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

May 4, 2023

Mr. Paul Kyostia
Senior Sea Lamprey Technician
Sea Lamprey Control Centre
1219 Queen Street East
Sault Ste. Marie, Ontario P6A 2E5

Reference No. 23-0006

Dear Mr. Kyostia:

This letter is in response to your January 20, 2023, email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to the transportation of lampricides by the U.S. Federal government and the government of Canada. Specifically, you ask whether liquid lampricide transported by foreign government employees, in foreign government vehicles, for foreign government purposes (i.e., not for the purpose of commerce) are subject to the HMR.

The HMR do not apply to the transportation of hazardous materials in a motor vehicle, aircraft, or vessel operated by Federal, state, or local government solely for noncommercial Federal, state, or local government purposes (see § 171.1(d)(5)). It is the opinion of this Office that the HMR also do not apply to a motor vehicle, aircraft, or vessel operated solely for the noncommercial Sea Lamprey Control Program.

I hope this information is helpful. Please contact us if we can be of further assistance.

Sincerely,

T. Glenn Foster
Chief, Regulatory Review and Reinvention Branch
Standards and Rulemaking Division

Pollack

23-0006

**From:** INFOCNTR (PHMSA)
**To:** Dodd, Alice (PHMSA); Hazmat Interps
**Subject:** FW: Request for Letter of Interpretation - Fisheries and Oceans Canada
**Date:** Tuesday, January 24, 2023 11:21:38 AM
**Attachments:** RequestforLetterofInterpretationSeaLampreyControlfinal.doc
TFM, Iofina (2013).pdf
TFM, Weylchem (2013).pdf
TFM Bar, (2013).pdf
Bayluscide, EC 20% (2013).pdf
Bayluscide, Granular 3.2% (2013).pdf

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Hello Alice and team,
Please see the attached documents for the LOI request. Please note that the phone number and physical mailing address are in the word document attached. Let us know if anything else is needed.
Thanks!
-Rachel (HMIC)

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**From:** Kyostia, Paul <Paul.Kyostia@dfo-mpo.gc.ca>
**Sent:** Tuesday, January 24, 2023 8:44 AM
**To:** INFOCNTR (PHMSA) <INFOCNTR.INFOCNTR@dot.gov>
**Subject:** Request for Letter of Interpretation - Fisheries and Oceans Canada



Good morning,

Please find attached a written request for a Letter of Interpretation for the Department of Fisheries and Oceans Canada following a phone conversation I had with Josh on Wednesday, January 18, 2023. His opinion was that we meet the criteria for HMR exception #171.1, paragraph D, sub paragraph 5. The attached letter provides specific details on our operation and we have also attached PDF's of all applicable hazardous materials that we transport.

Thanks in advance,

Paul Kyostia

**Fisheries and Oceans Canada**

Sea Lamprey Control Centre
1219 Queen Street East
Sault Ste. Marie, Ontario P6A 2E5
(705) 941-3000 / 1-800-553-9091
Fax: (705) 941-3025

**Pêches et Océans Canada**

Centre de lutte contre la lamproie marine
1219, rue Queen est
Sault Ste-marie (Ontario) P6A 2E5
(705) 941-3000 / 1-800-553-9091
téléc : (705) 941-3025

January 20, 2023

U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: Request for a Letter of Interpretation – Fisheries and Oceans Canada, Sea Lamprey Control Program

To whom it may concern,

This email is to request consideration for a Letter of Interpretation following a phone conversation I had with Josh on Wednesday January 18th, 2023. I had contacted the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) at that time to seek clarification on the applicability of the Hazardous Materials Regulations (HMR) to the transportation of lampricides that are manufactured solely for use in controlling Sea Lamprey populations within the Great Lakes basin.

The Great Lakes Fishery Commission was established by the governments of Canada and the United States through the 1954 Convention on Great Lakes Fisheries. The Great Lakes Fishery Commission facilitates successful cross-border collaboration that ensures the two nations, Great Lakes states, the Province of Ontario, Indigenous stakeholders, and other non-governmental entities work together to improve and perpetuate the Great Lakes fishery, including the management of the invasive Sea Lamprey. The Sea Lamprey Control Program is funded by the federal governments of both countries, and is deployed by staff of the US Fish and Wildlife Service and Fisheries and Oceans Canada employees, who act as agents to implement this initiative.

The primary method for controlling Sea Lamprey populations in the Great Lakes is by lampricide application. The lampricides we apply are manufactured solely for the purpose of controlling Sea Lamprey. By mutual agreement, Fisheries and Oceans Canada is responsible for control of sea lamprey in New York State, and Fisheries and Oceans often collaborates with the US Fish & Wildlife Service in applying lampricides to tributaries in other Great Lakes state. All of the lampricides we apply and transport in the United States are registered to the US Fish and Wildlife Service and we do not transport any lampricides across the border.

The liquid lampricide 3-Trifluoromethyl-4- nitro phenol (TFM) is classed as a Category 3 Flammable Liquid, Categories 3 and 4 Toxicity, Category 1 Corrosive and Category 1A Marine Pollutant. Please find attached Safety Data Sheets for the liquid lampricide TFM manufactured

by Weylchem and Iofina. Iofina also manufactures a solid form of the lampricide 3-Trifluoromethyl-4- nitro phenol (TFM bar) which is a slow dissolve application method. I have attached the Safety Data Sheet for the TFM bar as well.

The other formulation of lampricide is Niclosamide (commonly referred to as Bayluscide) which is manufactured by Coating Place Inc., Verona, WI, and comes in both a liquid and solid form. I have attached the Safety Data Sheets for Bayluscide 20% Emulsifiable Concentrate and Bayluscide 3.2% Granular for your review.

Given that we are foreign government employees, transporting hazardous materials in foreign government vehicles for foreign government purposes, and do not transport these hazardous materials for the purpose of commerce, we are seeking a Letter of Interpretation based on HMR exception #171.1, paragraph D, sub paragraph 5. . We are requesting our own letter of interpretation as we are concerned that the existing Letter of Interpretation created in 2010 for Canada's Department of National Defense (reference #10-0085) will not be sufficient for state inspection officers.

Please reach out to me should you require any additional information. You will find my name, email and phone number below.

Regards,

Paul Kyostia
Senior Sea Lamprey Technician
paul.kyostia@dfo-mpo.gc.ca
(705) 941-2634

# SAFETY DATA SHEET

## 1. Identification

| | |
|---|---|
| **Product identifier** | **TFM HP Sea Lamprey Larvicide; Lamprecid® Sea Lamprey larvicide** |
| **Other means of identification** | Not available. |
| **Recommended use** | Industrial use. |
| **Recommended restrictions** | None known. |

**Manufacturer / Importer / Supplier / Distributor information**

| | |
|---|---|
| **Manufacturer** | Iofina Chemical, Inc. |
| **Address** | 1025 Mary Laidley Drive, Covington, KY 41017<br>United States |
| **Telephone number** | 859-356-8000 |
| **Supplier** | U.S. Fish and Wildlife Service |
| **Address** | 1849 C Street NW Washington, D.C. 20240<br>United States |
| **Emergency telephone number** | Chemtrec (U.S.) 1-800-424-9300 |
| **Supplier** | Department of Fisheries and Oceans Canada - Sea Lamprey Control Centre |
| **Address** | 1219 Queen Street Sault Ste. Marie Ontario, Canada P6A 2E5 |
| **Emergency telephone number** | Canutec (Canada) 1-613-996-6666 |

## 2. Hazard(s) identification

| | | |
|---|---|---|
| **Physical hazards** | Flammable liquids | Category 3 |
| **Health hazards** | Acute toxicity, oral | Category 3 |
| | Skin corrosion/irritation | Category 2 |
| | Serious eye damage/eye irritation | Category 1 |
| | Specific target organ toxicity, single exposure | Category 3 respiratory tract irritation |
| | Specific target organ toxicity, single exposure | Category 3 narcotic effects |

**OSHA defined hazards** Not classified.

**Label elements**

**Signal word** Danger

**Hazard statement** Flammable liquid and vapor. Toxic if swallowed. Causes skin irritation. Causes serious eye damage. May cause respiratory irritation. May cause drowsiness or dizziness.

**Precautionary statement**

**Prevention** Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist/vapors. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only in well-ventilated areas.

**Response** If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. In case of fire: Use foam, carbon dioxide, dry powder or water fog for extinction.

**Storage** Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified (HNOC)** Static accumulating flammable liquids

## 3. Composition/information on ingredients

**Mixtures**

| Chemical name | CAS number | % |
|---|---|---|
| 3-Trifluoromethyl-4-nitrophenol | 88-30-2 | 20-40 |
| Isopropyl alcohol | 67-63-0 | 10-30 |
| Sodium hydroxide | 1310-73-2 | 1-10 |

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4. First-aid measures

**Inhalation** Remove victim from source of exposure. Get medical attention for any breathing difficulty.

**Skin contact** Remove contaminated clothing and shoes. Wash the skin immediately with soap and water. Get medical attention if irritation develops or persists.

**Eye contact** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

**Ingestion** Never give anything by mouth to a victim who is unconscious or is having convulsions. Immediately rinse mouth and drink plenty of water. Do not induce vomiting without advice from poison control center. Seek immediate medical attention.

**Most important symptoms/effects, acute and delayed** Irritation of nose and throat. Irritation of eyes and mucous membranes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

**Indication of immediate medical attention and special treatment needed** Treat symptomatically.

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

## 5. Fire-fighting measures

**Suitable extinguishing media** Water fog. Foam. Carbon dioxide (CO2).

**Unsuitable extinguishing media** None.

**Specific hazards arising from the chemical** The product is flammable, and heating may generate vapors which may form explosive vapor/air mixtures.

**Special protective equipment and precautions for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

**Fire-fighting equipment/instructions** Move containers from fire area if you can do it without risk.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Avoid inhalation of vapors and spray mist and contact with skin and eyes. Use personal protection as recommended in Section 8 of the SDS.

**Methods and materials for containment and cleaning up** Should not be released into the environment. Remove sources of ignition.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use.

**Environmental precautions** Avoid discharge into drains, water courses or onto the ground unless authorized by permit.

## 7. Handling and storage

**Precautions for safe handling**

Avoid inhalation of vapors and contact with skin and eyes. Use appropriate Personal Protective Equipment. The product is a flammable liquid. Take the necessary precautionary measures. Follow rules for flammable liquids. Ground and bond containers when transferring material. Ground container and transfer equipment to eliminate static electric sparks. Wash at the end of each work shift and before eating, smoking and using the toilet. Change contaminated clothing. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep upright. Do not reuse containers. Store away from incompatible materials.

## 8. Exposure controls/personal protection

**Occupational exposure limits**

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Components | Type | Value |
|---|---|---|
| Isopropyl alcohol (CAS 67-63-0) | PEL | 980 mg/m3 |
| | | 400 ppm |
| Sodium hydroxide (CAS 1310-73-2) | PEL | 2 mg/m3 |

**US. ACGIH Threshold Limit Values**

| Components | Type | Value |
|---|---|---|
| Isopropyl alcohol (CAS 67-63-0) | STEL | 400 ppm |
| | TWA | 200 ppm |
| Sodium hydroxide (CAS 1310-73-2) | Ceiling | 2 mg/m3 |

**US NIOSH Pocket Guide to Chemical Hazards: Ceiling Limit Value and Time Period (if specified)**

| Components | Type | Value |
|---|---|---|
| Sodium hydroxide (CAS 1310-73-2) | Ceiling | 2 mg/m3 |

**US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit (REL)**

| Components | Type | Value |
|---|---|---|
| Isopropyl alcohol (CAS 67-63-0) | TWA | 980 mg/m3 |
| | | 400 ppm |

**US NIOSH Pocket Guide to Chemical Hazards: Short Term Exposure Limit (STEL)**

| Components | Type | Value |
|---|---|---|
| Isopropyl alcohol (CAS 67-63-0) | STEL | 1225 mg/m3 |
| | | 500 ppm |

**Biological limit values**

**ACGIH Biological Exposure Indices**

| Components | Value | Determinant | Specimen | Sampling Time |
|---|---|---|---|---|
| Isopropyl alcohol (CAS 67-63-0) | 40 mg/l | Acetone | Urine | * |

* - For sampling details, please see the source document.

**Exposure guidelines**

Use personal protective equipment as required. Keep working clothes separately.

**Appropriate engineering controls**

If working with material indoors: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Wear safety glasses with side shields.

**Skin protection**

**Hand protection**

Wear protective gloves. Suitable gloves can be recommended by the glove supplier.

**Other**

Wear suitable protective clothing.

| | |
|---|---|
| **Respiratory protection** | When engineering controls are not sufficient to lower exposure levels below the applicable exposure limit, use a NIOSH approved respirator. Seek advice from local supervisor. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. |
| **Thermal hazards** | Wear appropriate thermal protective clothing, when necessary. |
| **General hygiene considerations** | Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice. |

## 9. Physical and chemical properties

| | |
|---|---|
| **Appearance** | Dark brown liquid. |
| **Physical state** | Liquid. |
| **Form** | Liquid. |
| **Color** | Dark brown. |
| **Odor** | Oily-nutty, phenolic. |
| **Odor threshold** | Not available. |
| **pH** | 9 |
| **Melting point/freezing point** | Not available. |
| **Initial boiling point and boiling range** | Not available. |
| **Flash point** | 88.0 - 103.0 °F (31.1 - 39.4 °C) |
| **Evaporation rate** | Not available. |
| **Flammability (solid, gas)** | Not applicable. |
| **Upper/lower flammability or explosive limits** | |
| **Flammability limit - lower (%)** | Not available. |
| **Flammability limit - upper (%)** | Not available. |
| **Explosive limit - lower (%)** | Not available. |
| **Explosive limit - upper (%)** | Not available. |
| **Vapor pressure** | Not available. |
| **Vapor density** | Not available. |
| **Relative density** | Not available. |
| **Solubility(ies)** | Not available. |
| **Partition coefficient (n-octanol/water)** | Not available. |
| **Auto-ignition temperature** | Not available. |
| **Decomposition temperature** | Not available. |
| **Viscosity** | 23.28 cP (77°F/25°C) |
| **Other information** | |
| **Density** | 1.27 g/ml |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity** | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| **Chemical stability** | Stable at normal conditions. |
| **Possibility of hazardous reactions** | Hazardous polymerization does not occur. |
| **Conditions to avoid** | Heat, sparks, flames. |
| **Incompatible materials** | Strong oxidizing agents. |
| **Hazardous decomposition products** | Carbon oxides. Nitrogen oxides. Hydrogen fluoride. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Ingestion** | Toxic if swallowed. |
| **Inhalation** | Causes respiratory tract irritation. May cause central nervous system effects. |
| **Skin contact** | Causes skin irritation. |
| **Eye contact** | Causes severe eye damage. |
| **Symptoms related to the physical, chemical and toxicological characteristics** | Irritation of nose and throat. Irritation of eyes and mucous membranes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. |

**Information on toxicological effects**

**Acute toxicity** Toxic if swallowed.

| Components | Species | Test Results |
|---|---|---|
| 3-Trifluoromethyl-4-nitrophenol (CAS 88-30-2) | | |
| **Acute** | | |
| *Dermal* | | |
| LD50 | Rabbit | > 2000 mg/kg |
| *Oral* | | |
| LD50 | Rat | 141 mg/kg |

| | |
|---|---|
| **Skin corrosion/irritation** | Causes skin irritation. |
| **Serious eye damage/eye irritation** | Causes severe eye damage. |
| **Respiratory sensitization** | Not classified. |
| **Skin sensitization** | Not a skin sensitizer. |
| **Germ cell mutagenicity** | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| **Carcinogenicity** | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. |
| **Reproductive toxicity** | Not classified. |
| **Specific target organ toxicity - single exposure** | May cause respiratory irritation. May cause drowsiness or dizziness. |
| **Specific target organ toxicity - repeated exposure** | Not classified. |
| **Aspiration hazard** | Not classified. |
| **Further information** | Components of the product may be absorbed into the body through the skin. |

## 12. Ecological information

**Ecotoxicity** Very toxic to aquatic organisms; may cause adverse effects in the aquatic environment.

| Components | | Species | Test Results |
|---|---|---|---|
| 3-Trifluoromethyl-4-nitrophenol (CAS 88-30-2) | | | |
| **Aquatic** | | | |
| Fish | LC50 | Freshwater fish | 0.6 - 37 mg/l |
| | | Rainbow trout,donaldson trout (Oncorhynchus mykiss) | 0.842 mg/l, 96 hours |
| Invertebrate | LC50 | Freshwater invertebrate | 3.8 - 22.3 mg/l |

| | |
|---|---|
| **Persistence and degradability** | No data is available on the degradability of this product. |
| **Bioaccumulative potential** | No data available. |
| **Mobility in soil** | No data available. |
| **Other adverse effects** | The product contains volatile organic compounds which have a photochemical ozone creation potential. |

## 13. Disposal considerations

| | |
|---|---|
| **Disposal instructions** | This material and its container must be disposed of as hazardous waste. Dispose in accordance with all applicable regulations. |
| **Hazardous waste code** | D001: Waste Flammable material with a flash point <140 °F |
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |

| | |
|---|---|
| **Contaminated packaging** | Since emptied containers may retain product residue, follow label warnings even after container is emptied. |

## 14. Transport information

**DOT**

| | |
|---|---|
| **UN number** | UN3013 |
| **UN proper shipping name** | Substituted nitrophenol pesticides, liquid, toxic, flammable |
| **Transport hazard class(es)** | 6.1 |
| **Subsidiary class(es)** | 3 |
| **Packing group** | III |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |
| **Special provisions** | T14, TP2, TP13, TP27 |
| **Packaging exceptions** | None |
| **Packaging non bulk** | 201 |
| **Packaging bulk** | 243 |

**IATA**

| | |
|---|---|
| **UN number** | UN3013 |
| **UN proper shipping name** | Substituted nitrophenol pesticide, liquid, toxic, flammable |
| **Transport hazard class(es)** | 6.1 |
| **Subsidiary class(es)** | 3 |
| **Packaging group** | III |
| **Environmental hazards** | Yes |
| **Labels required** | 6.1, 3 |
| **ERG Code** | 6F |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |

**IMDG**

| | |
|---|---|
| **UN number** | UN3013 |
| **UN proper shipping name** | SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC, FLAMMABLE |
| **Transport hazard class(es)** | 6.1 |
| **Subsidiary class(es)** | 3 |
| **Packaging group** | III |
| **Environmental hazards** | |
| **Marine pollutant** | Yes |
| **Labels required** | 6.1, 3 |
| **EmS** | F-E, S-D |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |

| | |
|---|---|
| **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** | This substance/mixture is not intended to be transported in bulk. |

## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. This material is not listed on the US TSCA 8(b) Inventory, and is exempt because it is FIFRA regulated.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Sodium hydroxide (CAS 1310-73-2) LISTED

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

| | |
|---|---|
| **Hazard categories** | Immediate Hazard - Yes<br>Delayed Hazard - No<br>Fire Hazard - Yes<br>Pressure Hazard - No<br>Reactivity Hazard - No |
| **SARA 302 Extremely hazardous substance** | No |
| **SARA 311/312 Hazardous chemical** | Yes |

**SARA 313 (TRI reporting)**

Not regulated.

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**Food and Drug Administration (FDA)** Not regulated.

**US state regulations** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**US. Massachusetts RTK - Substance List**

Isopropyl alcohol (CAS 67-63-0)
Sodium hydroxide (CAS 1310-73-2)

**US. New Jersey Worker and Community Right-to-Know Act**

Isopropyl alcohol (CAS 67-63-0) 500 lbs

**US. Pennsylvania RTK - Hazardous Substances**

Isopropyl alcohol (CAS 67-63-0)
Sodium hydroxide (CAS 1310-73-2)

**US. Rhode Island RTK**

Isopropyl alcohol (CAS 67-63-0)
Sodium hydroxide (CAS 1310-73-2)

**US. California Proposition 65**

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Not listed.

**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | No |

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

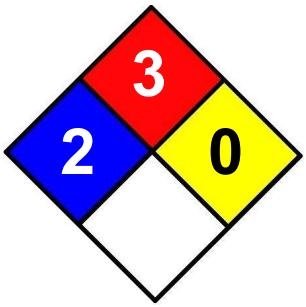
## 16. Other information, including date of preparation or last revision

**Issue date** 28-October-2013

**Revision date** -

**Version #** 01

**NFPA Ratings**




**References**

EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

**Disclaimer** The information in the sheet was written based on the best knowledge and experience currently available.

# Sea Lamprey Larvicide Lamprecid

SXR018854, Version 2.0 Revision Date 02.02.2015 Print Date 18.02.2015

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Trade name : Sea Lamprey Larvicide Lamprecid
Substance name : 4-Nitro-3-trifluoromethylphenol, solved in a mixture of isopropanol/water/sodium hydroxide

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Agricultural industry
Pesticide

### 1.3 Details of the supplier of the safety data sheet

Company : WeylChem Frankfurt GmbH
Stroofstraße 27
65933 Frankfurt am Main
Germany

Telephone : +49 69/870002-221
Responsible/issuing person : +49 69/870002-296
product.safety.frankfurt@weylchem.com

### 1.4 Emergency telephone number

Telephone : +49 (0) 69 305 6418 (24 H)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008)**

| | |
|---|---|
| Flammable liquids, Category 3 | H226: Flammable liquid and vapour. |
| Acute toxicity, Category 4 | H302: Harmful if swallowed. |
| Acute toxicity, Category 3 | H311: Toxic in contact with skin. |
| Skin corrosion, Category 1A | H314: Causes severe skin burns and eye damage. |
| Acute aquatic toxicity, Category 1 | H400: Very toxic to aquatic life. |
| Chronic aquatic toxicity, Category 1 | H410: Very toxic to aquatic life with long lasting effects. |

### 2.2 Label elements

**Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :

Signal word : Danger

Hazard statements :

| | |
|---|---|
| H226 | Flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H311 | Toxic in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Precautionary statements :

**Prevention:**

| | |
|---|---|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |

**Response:**

| | |
|---|---|
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| P304 + P340 + P310 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P361 + P364 | Take off immediately all contaminated clothing and wash it before reuse. |
| P370 + P378 | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. |

Hazardous components which must be listed on the label:
4-Nitro-3-trifluoromethylphenol

Propan-2-ol

sodium hydroxide

### 2.3 Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
This product is a mixture. Health hazard information is based on its components.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical nature : 4-Nitro-3-trifluoromethylphenol, solved in a mixture of isopropanol/water/sodium hydroxide

**Hazardous components**

| Chemical Name | CAS-No.<br>EC-No.<br>Registration number | Classification (67/548/EEC) | Classification (REGULATION (EC) No 1272/2008) | Concentration [%] |
|---|---|---|---|---|
| Propan-2-ol | 67-63-0<br>200-661-7 | F; R11<br>Xi; R36<br>R67 | Flam. Liq.2; H225<br>Eye Irrit.2; H319<br>STOT SE3; H336<br>Flam. Liq.2; H225<br>Eye Irrit.2; H319<br>STOT SE3; H336 | 20 - 24 |
| 4-Nitro-3-trifluoromethylphenol | 88-30-2<br>201-818-2 | T-N; R22-R24-R38-R41-R50/53 | Acute Tox.4; H302<br>Acute Tox.3; H311<br>Skin Irrit.2; H315<br>Eye Dam.1; H318<br>Aquatic Acute1; H400<br>Aquatic Chronic1; H410 | 32 - 36 |
| sodium hydroxide | 1310-73-2<br>215-185-5 | C; R35 | Skin Corr.1A; H314 | 5 - 10 |

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General advice : Remove soiled or soaked clothing immediately
If someone exposed to the product feels unwell, contact a doctor and show this safety data sheet.
Adhere to personal protective measures when giving first aid

If inhaled : Remove the casualty into fresh air and keep him calm.
Call in a physician immediately and show him the Safety Data Sheet.
No direct breathing aid should be given by the first medical helper.

In case of skin contact : Remove contaminated clothes, under clothes and shoes immediately.
In case of contact with skin wash off immediately with polyethylene glycol 400, then with plenty of water
Call in a physician immediately and show him the Safety Data Sheet.

Keep wounds covered free of germs.
Keep body calm, protect against loss of heat.

In case of eye contact : Rinse immediately with gently running water for 15 minutes, maintaining eyelids open. Consult at once an ophthalmologist or a physician.

If swallowed : Call in a physician immediately and show him the Safety Data Sheet.
Slurry 30 - 50 g medical charcoal in water and administer it to the patient.

**4.2 Most important symptoms and effects, both acute and delayed**

Symptoms : No information available.

**4.3 Indication of any immediate medical attention and special treatment needed**

Treatment : Treat symptomatically.

## SECTION 5: Firefighting measures

**5.1 Extinguishing media**

Suitable extinguishing media : Water spray
Foam
Dry powder
Carbon dioxide (CO2)

**5.2 Special hazards arising from the substance or mixture**

Specific hazards during fire-fighting : In case of fires, hazardous combustion gases are formed:
Hydrogen fluoride (HF)
Nitrous gases (NOx)
Carbon monoxide (CO)

**5.3 Advice for firefighters**

Special protective equipment for firefighters : Wear flame-proof clothes, flame-proof gloves, and, if necessary, flame-proof hood as well as helmet and fire-brigade boots when fighting fire. Use self-contained breathing apparatus

Further information : Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

## SECTION 6: Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : See: Exposure controls and personal protection.
Information regarding Safe handling, see chapter 7.

Information regarding personal protective measures see, chapter 8.
Information regarding Waste Disposal, see chapter 13.

### 6.2 Environmental precautions

Environmental precautions : Do not allow entry to drains,water courses or soil

### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Pick up with liquid binding materials and if necessary fill in containers capable of being locked.
Containers in which spilt substance has been collected must be adequately labelled
Dispose of absorbed material in accordance with the regulations.
Clean contaminated floors and objects thoroughly, observing environmental regulations

### 6.4 Reference to other sections

For personal protection see section 8.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : Provide good ventilation of working area (local exhaust ventilation if necessary).

Advice on protection against fire and explosion : Observe the general rules of industrial fire protection

Hygiene measures : At work do not eat, drink, smoke or take drugs.
Keep away from foodstuffs and beverages.
Wash hands before breaks and after work.
Use barrier skin cream.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep only in the original container

Further information on storage conditions : Keep container tightly closed and dry in a cool, well-ventilated place
Keep only in the original container at temperature not exceeding 50 °C

Advice on common storage : Do not store or transport together with foodstuffs

Storage class (TRGS 510) : 3, Flammable Liquids

### 7.3 Specific end use(s)

Specific use(s) : This information is not available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:**

Propan-2-ol : End Use: Workers
Exposure routes: Dermal
Potential health effects: Long-term systemic effects
Value: 888 mg/kgDNEL
End Use: Workers
Exposure routes: Inhalation
Potential health effects: Long-term systemic effects
Value: 500 mg/m3DNEL
End Use: Consumers
Exposure routes: Dermal
Potential health effects: Long-term systemic effects
Value: 319 mg/kgDNEL
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Long-term systemic effects
Value: 89 mg/m3DNEL
End Use: Consumers
Exposure routes: Oral
Potential health effects: Long-term systemic effects
Value: 26 mg/kgDNEL

**Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:**

Propan-2-ol : Fresh water
Value: 140,9 mg/l
salt water
Value: 140,9 mg/l
Fresh water sediment
Value: 552 mg/kg
Marine sediment
Value: 552 mg/kg
Soil
Value: 28 mg/kg

### 8.2 Exposure controls

**Personal protective equipment**

Eye protection : tightly fitting safety glasses

Hand protection
Break through time : 480 min
Glove thickness : 0,7 mm
Remarks : For long-term exposure:
Butyl rubber gloves
These types of protective gloves are offered by various manufacturers. Please note the manufacturers´ detailed statements, especially about the minimum thickness and the minimum

breakthrough time. Consider also the particular working conditions under which the gloves are being used.

| | | |
|---|---|---|
| Skin and body protection | : | protective clothing<br>rubber apron |
| Respiratory protection | : | Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. |
| Protective measures | : | Do not inhale vapours<br>Avoid contact with eyes and skin<br>Observe the usual precautions for handling chemicals. |

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | liquid |
| Colour | : | dark brown |
| Odour | : | phenol-like |
| pH | : | 9,5, (20 °C) |
| Boiling point | : | 240,8 °C (1013,0 hPa)<br>Method: 92/69/EEC, A.2.<br>GLP: yes<br>Active ingredient |
| Flash point | : | 27,9 °C<br>(1,013 hPa)<br>Method: 92/69/EEC, A.9.<br>GLP: yes |
| Upper explosion limit | : | 13,4 %(V)<br>Data relate to solvent |
| Lower explosion limit | : | 2 %(V)<br>Data relate to solvent |
| Vapour pressure | : | 30,6 hPa (20 °C)<br>Method: OECD 104 |
| Relative density | : | 1,162 (20 °C)<br>Method: Directive 84/449/EEC, A.3<br>GLP: yes |
| Density | : | 1,162 g/cm3 (20 °C)<br>Method: 92/69/EEC, A.3. |
| Water solubility | : | miscible (25 °C) |

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | log Pow: 3,6<br>Method: 92/69/EEC, A.8. |
| Auto-ignition temperature | : | not determined |
| Ignition temperature | : | 475 °C<br>Method: DIN 51794 |
| Thermal decomposition | : | from 200 °C<br>Method: DTA |
| Viscosity, dynamic | : | not determined |
| Viscosity, kinematic | : | 13,3 mm2/s (20 °C)<br>Method: OECD 114<br>GLP: yes |
| Explosive properties | : | not explosive<br>Method: Directive 84/449/EEC, A.14<br>GLP: yes |

**9.2 Other information**

| | | |
|---|---|---|
| Surface tension | : | not determined |

## SECTION 10: Stability and reactivity

**10.1 Reactivity**

No dangerous reaction known under conditions of normal use.

**10.2 Chemical stability**

No decomposition if stored and applied as directed.

**10.3 Possibility of hazardous reactions**

| | | |
|---|---|---|
| Hazardous reactions | : | When handled and stored appropriately no dangerous reactions are known |

**10.4 Conditions to avoid**

| | | |
|---|---|---|
| Conditions to avoid | : | Avoid contact with oxidizing agents.<br>Keep away from heat, sparks, open flames, and other sources of ignition. |

**10.5 Incompatible materials**

| | | |
|---|---|---|
| Materials to avoid | : | Strong oxidizing agents |

**10.6 Hazardous decomposition products**

| | | |
|---|---|---|
| Hazardous decomposition products | : | Build-up of dangerous/toxic fumes possible in cases of fire/high temperature.<br>Hydrogen fluoride<br>Nitrogen oxides (NOx)<br>Carbon monoxide<br>Hydrogen fluoride |

## SECTION 11: Toxicological information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Product:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 rat: 458 mg/kg<br>GLP: no<br><br>Acute toxicity estimate : 1.330 mg/kg<br>Method: Calculation method |
| Acute inhalation toxicity | : | not determined |
| Acute dermal toxicity | : | LD50 rabbit: 409 mg/kg<br>Method: OECD 402 - EEC 92/69, B.3<br>GLP: yes<br>The values mentioned are those of the active ingredient.<br><br>Acute toxicity estimate : 797,87 mg/kg<br>Method: Calculation method |

**Skin corrosion/irritation**

**Product:**

Species: rabbit
Result: irritant
Method: OECD 404 - EEC 92/69, B.4
GLP: yes
Information based on the active ingredient.

**Serious eye damage/eye irritation**

**Product:**

Species: rabbit eye
Classification: Risk of serious damage to eyes.
Information derived from the effect on skin
Information based on the active ingredient.

**Respiratory or skin sensitisation**

**Product:**

Result: Not known

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**STOT - single exposure**

No data available

**STOT - repeated exposure**

No data available

**Aspiration toxicity**

No data available

**Further information**

**Product:**

On the basis of structural similarity, methaemoglobin formation cannot be excluded

Can be absorbed through skin

## SECTION 12: Ecological information

### 12.1 Toxicity

**Product:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Spotted Bifur.Catfish): 0,94 mg/l<br>Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates | : | not determined |
| Toxicity to algae | : | not determined |

### 12.2 Persistence and degradability

**Product:**

| | | |
|---|---|---|
| Biodegradability | : | Result: sparingly degradable |

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

**Product:**

| | | |
|---|---|---|
| Assessment | : | This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT). |

### 12.6 Other adverse effects

**Product:**

| | | |
|---|---|---|
| Additional ecological information | : | Do not allow to enter soil, waterways or waste water<br>Ecological data given refer to the main component. |

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

| | | |
|---|---|---|
| Product | : | Product should be be taken to a suitable and authorized waste disposal site in accordance with relevant regulations and if necessary after consultation with the waste disposal operator and/or the competent Authorities |
| Contaminated packaging | : | Packaging that cannot be cleaned should be disposed of as product waste |

## SECTION 14: Transport information

### 14.1 UN number

| | | |
|---|---|---|
| **IMDG** | : | UN 3013 |
| **IATA** | : | UN 3013 |

### 14.2 Proper shipping name

| | | |
|---|---|---|
| **IMDG** | : | SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC, FLAMMABLE (4-Nitro-3-trifluoromethylphenol, Isopropyl alcohol) |
| **IATA** | : | SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC, FLAMMABLE (4-Nitro-3-trifluoromethylphenol, Isopropyl alcohol) |

### 14.3 Transport hazard class

| | | |
|---|---|---|
| **IMDG** | : | 6.1 |
| **IATA** | : | 6.1 |

### 14.4 Packing group

**IMDG**

| | | |
|---|---|---|
| Packaging group | : | II |
| Labels | : | 6.1 (3) |
| EmS Number | : | F-E, S-D |

**IATA**

| | | |
|---|---|---|
| Packaging group | : | II |
| Labels | : | 6.1 (3) |
| Packing instruction (cargo aircraft) | : | 662 |
| Packing instruction (passenger aircraft) | : | 654 |
| Packing instruction (passenger aircraft) | : | Y641 |

### 14.5 Environmental hazards

**IMDG**

| | | |
|---|---|---|
| Marine pollutant | : | yes (4-Nitro-3-trifluoromethylphenol) |

**IATA**

| | | |
|---|---|---|
| Environmentally hazardous | : | yes |

### 14.6 Special precautions for user

| | | |
|---|---|---|
| Remarks | : | Protect from frost. |

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

Not applicable for product as supplied.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

### 15.2 Chemical Safety Assessment

not required

## SECTION 16: Other information

**Full text of R-Phrases**

| | | |
|---|---|---|
| R11 | : | Highly flammable. |
| R22 | : | Harmful if swallowed. |

| | | |
|---|---|---|
| R24 | : | Toxic in contact with skin. |
| R35 | : | Causes severe burns. |
| R36 | : | Irritating to eyes. |
| R38 | : | Irritating to skin. |
| R41 | : | Risk of serious damage to eyes. |
| R50/53 | : | Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| R67 | : | Vapours may cause drowsiness and dizziness. |

**Full text of H-Statements**

| | | |
|---|---|---|
| H225 | : | Highly flammable liquid and vapour. |
| H302 | : | Harmful if swallowed. |
| H311 | : | Toxic in contact with skin. |
| H314 | : | Causes severe skin burns and eye damage. |
| H315 | : | Causes skin irritation. |
| H318 | : | Causes serious eye damage. |
| H319 | : | Causes serious eye irritation. |
| H336 | : | May cause drowsiness or dizziness. |
| H400 | : | Very toxic to aquatic life. |
| H410 | : | Very toxic to aquatic life with long lasting effects. |

**Full text of other abbreviations**

| | | |
|---|---|---|
| Acute Tox. | : | Acute toxicity |
| Aquatic Acute | : | Acute aquatic toxicity |
| Aquatic Chronic | : | Chronic aquatic toxicity |
| Eye Dam. | : | Serious eye damage |
| Eye Irrit. | : | Eye irritation |
| Flam. Liq. | : | Flammable liquids |
| Skin Corr. | : | Skin corrosion |
| Skin Irrit. | : | Skin irritation |
| STOT SE | : | Specific target organ toxicity - single exposure |

**Further information**

| | | |
|---|---|---|
| Other information | : | Observe national and local legal requirements<br><br>Work limitations for youth should be observed.<br>Work limitations for pregnant woman and for woman nursing babies should be observed. |

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 given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

# SAFETY DATA SHEET

## 1. Identification

| | |
|---|---|
| **Product identifier** | **TFM Bar** |
| **Other means of identification** | Not available. |
| **Recommended use** | Industrial use. |
| **Recommended restrictions** | None known. |

**Manufacturer / Importer / Supplier / Distributor information**

| | |
|---|---|
| **Manufacturer** | Iofina Chemical, Inc. |
| **Address** | 1025 Mary Laidley Drive, Covington, KY 41017<br>United States |
| **Telephone number** | 859-356-8000 |
| **Supplier** | U.S. Fish and Wildlife Service |
| **Address** | 1849 C Street NW Washington, D.C. 20240<br>United States |
| **Emergency telephone number** | Chemtrec (U.S.) 1-800-424-9300 |
| **Supplier** | Department of Fisheries and Oceans Canada - Sea Lamprey Control Centre |
| **Address** | 1219 Queen Street Sault Ste. Marie Ontario, Canada P6A 2E5 |
| **Emergency telephone number** | Canutec (Canada) 1-613-996-6666 |

## 2. Hazard(s) identification

| | | |
|---|---|---|
| **Physical hazards** | Not classified. | |
| **Health hazards** | Acute toxicity, oral | Category 4 |
| | Skin corrosion/irritation | Category 2 |
| | Serious eye damage/eye irritation | Category 1 |
| | Specific target organ toxicity, single exposure | Category 3 respiratory tract irritation |
| **OSHA defined hazards** | Not classified. | |

**Label elements**

| | |
|---|---|
| **Signal word** | Danger |
| **Hazard statement** | Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause respiratory irritation. |

**Precautionary statement**

| | |
|---|---|
| **Prevention** | Avoid breathing dust. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. |
| **Response** | If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. |
| **Storage** | Store in a well-ventilated place. Keep container tightly closed. Store locked up. |
| **Disposal** | Dispose of contents/container in accordance with local/regional/national/international regulations. |

**Hazard(s) not otherwise classified (HNOC)** Not classified.

## 3. Composition/information on ingredients

**Mixtures**

| Chemical name | CAS number | % |
|---|---|---|
| Oxirane, 2-methyl-, Polymer With Oxirane | 9003-11-6 | 42-46 |
| 3-trifluoromethyl-4-nitrophenol | 88-30-2 | 22-24 |
| Alcohols, C16-18, ethoxylated | 68439-49-6 | 15-17 |
| Nonylphenol, ethoxylated | 9016-45-9 | 15-17 |

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4. First-aid measures

**Inhalation** Remove victim from source of exposure. Get medical attention for any breathing difficulty.

**Skin contact** Remove contaminated clothes and rinse skin thoroughly with water for at least 15 minutes. Get medical attention if irritation develops or persists.

**Eye contact** Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

**Ingestion** Never give anything by mouth to a victim who is unconscious or is having convulsions. Immediately rinse mouth and drink plenty of water. Do not induce vomiting without advice from poison control center. Seek immediate medical attention.

**Most important symptoms/effects, acute and delayed** Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation.

**Indication of immediate medical attention and special treatment needed** Treat symptomatically.

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

**Suitable extinguishing media** Water fog. Foam. Carbon dioxide (CO2).

**Unsuitable extinguishing media** None.

**Specific hazards arising from the chemical** The product is not flammable. Will burn if involved in a fire.

**Special protective equipment and precautions for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

**Fire-fighting equipment/instructions** Move containers from fire area if you can do it without risk.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Avoid inhalation of dust and contact with skin and eyes. Use personal protection recommended in Section 8 of the SDS.

**Methods and materials for containment and cleaning up** Shovel into dry containers. Cover and move the containers. Flush the area with water. Ventilate the area.
Clean up in accordance with all applicable regulations.

## 7. Handling and storage

**Precautions for safe handling** Avoid inhalation of dust and contact with skin and eyes. Wash at the end of each work shift and before eating, smoking and using the toilet. Change contaminated clothing. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities** Keep upright. Store in tightly closed original container in a dry, cool and well-ventilated place. Protect from direct sunlight. Store away from incompatible materials. Do not reuse containers.

## 8. Exposure controls/personal protection

**Occupational exposure limits**

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Components | Type | Value | Form |
|---|---|---|---|
| 3-trifluoromethyl-4-nitro phenol (CAS SEQ250) | PEL | 5 mg/m3 | Respirable fraction. |
| | | 15 mg/m3 | Total dust. |

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

| Components | Type | Value | Form |
|---|---|---|---|
| 3-trifluoromethyl-4-nitro phenol (CAS SEQ250) | TWA | 5 mg/m3 | Respirable fraction. |
| | | 15 mg/m3 | Total dust. |
| | | 50 millions of particle | Total dust. |
| | | 15 millions of particle | Respirable fraction. |

**US. ACGIH Threshold Limit Values**

| Components | Type | Value | Form |
|---|---|---|---|
| 3-trifluoromethyl-4-nitro phenol (CAS SEQ250) | TWA | 3 mg/m3 | Respirable particles. |
| | | 10 mg/m3 | Inhalable particles. |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Exposure guidelines** Use personal protective equipment as required. Keep working clothes separately.

**Appropriate engineering controls** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields.

**Skin protection**

**Hand protection** Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

**Other** Wear suitable protective clothing.

**Respiratory protection** When engineering controls are not sufficient to lower exposure levels below the applicable exposure limit, use a NIOSH approved respirator. Seek advice from local supervisor. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

**Thermal hazards** Not applicable.

**General hygiene considerations** Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

**Appearance** Light brown solid.

**Physical state** Solid.

**Form** Solid bars.

**Color** Light brown.

**Odor** Metallic.

**Odor threshold** Not available.

**pH** 3.81

**Melting point/freezing point** Not available.

**Initial boiling point and boiling range** Not available.

**Flash point** Not available.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not available.

**Upper/lower flammability or explosive limits**

**Flammability limit - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

**Explosive limit - lower (%)** Not available.

| | |
|---|---|
| **Explosive limit - upper (%)** | Not available. |
| **Vapor pressure** | Not available. |
| **Vapor density** | Not available. |
| **Relative density** | 1.19 |
| **Solubility(ies)** | Not available. |
| **Partition coefficient (n-octanol/water)** | Not available. |
| **Auto-ignition temperature** | Not available. |
| **Decomposition temperature** | Not available. |
| **Viscosity** | Not available. |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity** | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| **Chemical stability** | Stable at normal conditions. |
| **Possibility of hazardous reactions** | Hazardous polymerization does not occur. |
| **Conditions to avoid** | None under normal conditions. |
| **Incompatible materials** | Strong oxidizing agents. |
| **Hazardous decomposition products** | Carbon oxides. Nitrogen oxides. Hydrogen fluoride. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Ingestion** | Harmful if swallowed. |
| **Inhalation** | Irritating to respiratory system. |
| **Skin contact** | Causes skin irritation. |
| **Eye contact** | Causes serious eye damage. |
| **Symptoms related to the physical, chemical and toxicological characteristics** | Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. |

**Information on toxicological effects**

**Acute toxicity** Harmful if swallowed.

| Components | Species | Test Results |
|---|---|---|
| 3-trifluoromethyl-4-nitrophenol (CAS 88-30-2) | | |
| **Acute** | | |
| *Dermal* | | |
| LD50 | Rabbit | > 2000 mg/kg |
| *Oral* | | |
| LD50 | Rat | 141 mg/kg |
| Oxirane, 2-methyl-, Polymer With Oxirane (CAS 9003-11-6) | | |
| **Acute** | | |
| *Oral* | | |
| LD50 | Rat | > 2000 mg/kg |

| | |
|---|---|
| **Skin corrosion/irritation** | Causes skin irritation. |
| **Serious eye damage/eye irritation** | Causes serious eye damage. |
| **Respiratory sensitization** | Not classified. |
| **Skin sensitization** | Not a skin sensitizer. |
| **Germ cell mutagenicity** | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| **Carcinogenicity** | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. |
| **Reproductive toxicity** | Not classified. |
| **Specific target organ toxicity - single exposure** | May cause respiratory irritation. |

| | |
|---|---|
| **Specific target organ toxicity - repeated exposure** | Not classified. |
| **Aspiration hazard** | Not classified. |
| **Further information** | No other specific acute or chronic health impact noted. |

## 12. Ecological information

**Ecotoxicity** Toxic to aquatic life. Due to the form of the product the environmental hazard is considered to be limited.

| Components | | Species | Test Results |
|---|---|---|---|
| 3-trifluoromethyl-4-nitrophenol (CAS 88-30-2) | | | |
| **Aquatic** | | | |
| Fish | LC50 | Freshwater fish | 0.6 - 37 mg/l |
| | | Rainbow trout,donaldson trout (Oncorhynchus mykiss) | 0.842 mg/l, 96 hours |
| Invertebrate | LC50 | Freshwater invertebrate | 3.8 - 22.3 mg/l |
| Nonylphenol, ethoxylated (CAS 9016-45-9) | | | |
| **Aquatic** | | | |
| Crustacea | EC50 | Water flea (Daphnia magna) | 12.2 mg/l, 48 hours |
| Fish | LC50 | Bluegill (Lepomis macrochirus) | 1 - 1.8 mg/l, 96 hours |
| Oxirane, 2-methyl-, Polymer With Oxirane (CAS 9003-11-6) | | | |
| **Aquatic** | | | |
| Crustacea | EC50 | Invertebrates (Invertebrates) | > 100 mg/l, 48 hours |
| Fish | LC50 | Fish | > 100 mg/l, 96 hours |

| | |
|---|---|
| **Persistence and degradability** | No data is available on the degradability of this product. |
| **Bioaccumulative potential** | No data available. |
| **Mobility in soil** | No data available. |
| **Other adverse effects** | An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. |

## 13. Disposal considerations

| | |
|---|---|
| **Disposal instructions** | This material and its container must be disposed of as hazardous waste. Dispose in accordance with all applicable regulations. |
| **Hazardous waste code** | Not regulated. |
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Since emptied containers may retain product residue, follow label warnings even after container is emptied. |

## 14. Transport information

**DOT**

Not regulated as a hazardous material by DOT.

**IATA**

Not regulated as a dangerous good.

**IMDG**

Not regulated as a dangerous good.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** This substance/mixture is not intended to be transported in bulk.

## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
This material is not listed on the US TSCA 8(b) Inventory, and is exempt because it is FIFRA regulated.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**
Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**
No

**SARA 311/312 Hazardous chemical**
Yes

**SARA 313 (TRI reporting)**
Not regulated.

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**
Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**
Not regulated.

**Safe Drinking Water Act (SDWA)**
Not regulated.

**Food and Drug Administration (FDA)**
Not regulated.

**US state regulations**
This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**US. Massachusetts RTK - Substance List**
Not regulated.

**US. New Jersey Worker and Community Right-to-Know Act**
Not regulated.

**US. Pennsylvania RTK - Hazardous Substances**
Not regulated.

**US. Rhode Island RTK**
Not regulated.

**US. California Proposition 65**

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**
Not listed.

**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | No |

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

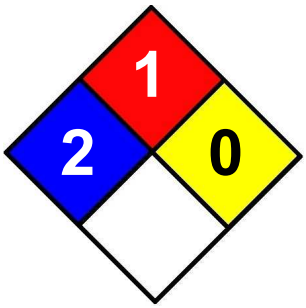
## 16. Other information, including date of preparation or last revision

**Issue date** 26-November-2013

**Revision date** -

**Version #** 01

**NFPA Ratings**




**References**
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available.

# SAFETY DATA SHEET

## 1. Identification

**Product identifier** **Bayluscide 3.2% Granular Sea Lamprey Larvicide; Bayluscide Granular Sea Lamprey Larvicide.**

**Other means of identification** Not available.

**Synonyms** Niclosamide ethanolamine salt mixture; clonitralide mixture

**Recommended use** Industrial use.

**Recommended restrictions** None known.

**Manufacturer / Importer / Supplier / Distributor information**

**Manufacturer** Coating Place, Inc.
**Address** 200 Paoli Street Verona, WI 53593
United States
**Telephone number** 608-845-9521
**Supplier** U.S. Fish and Wildlife Service
**Address** 1849 C Street NW Washington, D.C. 20240
United States
**Emergency telephone number** Chemtrec (U.S.) 1-800-424-9300
**Supplier** Department of Fisheries and Oceans Canada - Sea Lamprey Control Centre
**Address** 1219 Queen Street Sault Ste. Marie Ontario, Canada P6A 2E5
**Emergency telephone number** Canutec (Canada) 1-613-996-6666

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards** Not classified.

**OSHA defined hazards** Not classified.

**Label elements**

**Hazard symbol** None.

**Signal word** None.

**Hazard statement** The mixture does not meet the criteria for classification.

**Precautionary statement**

**Prevention** Observe good industrial hygiene practices.

**Response** Wash hands after handling.

**Storage** Store away from incompatible materials.

**Disposal** Dispose of waste and residues in accordance with local authority requirements.

**Hazard(s) not otherwise classified (HNOC)** Not classified.

## 3. Composition/information on ingredients

**Mixtures**

| Chemical name | CAS number | % |
|---|---|---|
| Silicon dioxide | 7631-86-9 | 68-72 |
| Polyoxyethylene-poly oxypropylene block copolymer | 9003-11-6 | 18-20 |
| Ethyl cellulose | 9004-57-3 | 4 |
| Niclosamide ethanolamine salt | 1420-04-8 | 3-3.6 |
| Hydroxypropyl cellulose salt | 9004-64-2 | 2 |

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4. First-aid measures

**Inhalation** Remove victim to fresh air. Get medical attention if symptoms persist.

**Skin contact** Remove contaminated clothing and shoes. Wash the skin immediately with soap and water. Get medical attention if irritation develops and persists.

**Eye contact** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation develops and persists.

**Ingestion** Never give anything by mouth to a victim who is unconscious or is having convulsions. Immediately rinse mouth and drink plenty of water or milk. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Seek immediate medical attention or advice.

**Most important symptoms/effects, acute and delayed** Irritation of eyes and mucous membranes. Irritation of nose and throat. Cough. Skin irritation.

**Indication of immediate medical attention and special treatment needed** Treat symptomatically.

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

**Suitable extinguishing media** Dry chemical powder, water spray.

**Unsuitable extinguishing media** None known.

**Specific hazards arising from the chemical** The product is not flammable. By heating and fire, toxic vapors/gases may be formed.

**Special protective equipment and precautions for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

**Fire-fighting equipment/instructions** Move containers from fire area if you can do so without risk.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Avoid inhalation of dust and contact with skin and eyes. Use personal protection as recommended in Section 8 of the SDS.

**Methods and materials for containment and cleaning up** Cover with plastic sheet to prevent spreading. With clean shovel place material into clean, dry container and cover loosely; move containers from spill area. Following product recovery, flush area with water. Ventilate the area.
Clean up in accordance with all applicable regulations.

**Environmental precautions** Avoid discharge into drains, water courses or onto the ground unless authorized by permit.

## 7. Handling and storage

**Precautions for safe handling** Avoid inhalation of dust and contact with skin and eyes. Wash at the end of each work shift and before eating, smoking and using the toilet. Change contaminated clothing. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities** Keep upright. Store in tightly closed original container in a dry, cool and well-ventilated place. Protect from direct sunlight. Store away from incompatible materials. Do not reuse containers.

## 8. Exposure controls/personal protection

**Occupational exposure limits**

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Components | Type | Value | Form |
|---|---|---|---|
| Niclosamide ethanolamine salt (CAS 1420-04-8) | PEL | 5 mg/m3 | Respirable fraction. |
| | | 15 mg/m3 | Total dust. |

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

| Components | Type | Value | Form |
|---|---|---|---|
| Niclosamide ethanolamine salt (CAS 1420-04-8) | TWA | 5 mg/m3 | Respirable fraction. |
| | | 15 mg/m3 | Total dust. |
| | | 50 millions of particle | Total dust. |

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

| Components | Type | Value | Form |
|---|---|---|---|
| | | 15 millions of particle | Respirable fraction. |
| Silicon dioxide (CAS 7631-86-9) | TWA | 0.8 mg/m3 | |
| | | 20 mppcf | |

**US. ACGIH Threshold Limit Values**

| Components | Type | Value | Form |
|---|---|---|---|
| Niclosamide ethanolamine salt (CAS 1420-04-8) | TWA | 3 mg/m3 | Respirable particles. |
| | | 10 mg/m3 | Inhalable particles. |

**US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit (REL)**

| Components | Type | Value |
|---|---|---|
| Silicon dioxide (CAS 7631-86-9) | TWA | 6 mg/m3 |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Exposure guidelines** Use personal protective equipment as required. Keep working clothes separately. No exposure standards allocated.

**Appropriate engineering controls** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields.

**Skin protection**

**Hand protection** Wear protective gloves.

**Other** Normal work clothing (long sleeved shirts and long pants) is recommended.

**Respiratory protection** Use a NIOSH–approved respirator if there is a potential for exposure to dust exceeding exposure limits (See 29 CRF 1910.134, respiratory protection standard). Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

**Thermal hazards** Not applicable.

**General hygiene considerations** Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

**Appearance** Dark yellow. Granules.

**Physical state** Solid.

**Form** Granules.

**Color** Dark yellow.

**Odor** Cresol-like.

**Odor threshold** Not available.

**pH** 9.05 (1% aqueous solution at 78.8°F/26°C)

**Melting point/freezing point** Not available.

**Initial boiling point and boiling range** Not available.

**Flash point** Not available.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not available.

**Upper/lower flammability or explosive limits**

**Flammability limit - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

| | |
|---|---|
| **Explosive limit - lower (%)** | Not available. |
| **Explosive limit - upper (%)** | Not available. |
| **Vapor pressure** | 6.9 x 10-13 mm Hg at 68°F/20°C |
| **Vapor density** | Not available. |
| **Relative density** | Not available. |
| **Solubility(ies)** | Completely Soluble (100%) 11 ppm at pH 8.9 (for Niclosamide). |
| **Partition coefficient (n-octanol/water)** | Not available. |
| **Auto-ignition temperature** | Not available. |
| **Decomposition temperature** | Not available. |
| **Viscosity** | Not applicable. |
| **Other information** | |
| **Bulk density** | 1.26 g/ml |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity** | Stable at normal conditions. None known. |
| **Chemical stability** | Stable at normal conditions. |
| **Possibility of hazardous reactions** | Hazardous polymerization does not occur. |
| **Conditions to avoid** | Heat. |
| **Incompatible materials** | Strong alkalis. Strong acids. Strong oxidizing agents. |
| **Hazardous decomposition products** | Carbon oxides. Nitrogen oxides. Ammonia. Hydrogen chloride. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Ingestion** | May cause discomfort if swallowed. |
| **Inhalation** | Inhalation of dusts may cause respiratory irritation. |
| **Skin contact** | May cause skin irritation. |
| **Eye contact** | May cause eye irritation. |
| **Symptoms related to the physical, chemical and toxicological characteristics** | Irritation of eyes and mucous membranes. Irritation of nose and throat. Cough. Skin irritation. |

**Information on toxicological effects**

**Acute toxicity** Ingestion may cause irritation and malaise.

| Components | Species | Test Results |
|---|---|---|
| Hydroxypropyl cellulose salt (CAS 9004-64-2) | | |
| **Acute** | | |
| *Oral* | | |
| LD50 | Rat | 10200 mg/kg |
| Niclosamide ethanolamine salt (CAS 1420-04-8) | | |
| **Acute** | | |
| *Oral* | | |
| LD50 | Rat | > 5000 mg/kg |
| Polyoxyethylene-polyoxypropylene block copolymer (CAS 9003-11-6) | | |
| **Acute** | | |
| *Oral* | | |
| LD50 | Rat | > 2000 mg/kg |

| | |
|---|---|
| **Skin corrosion/irritation** | Not classified. |
| **Serious eye damage/eye irritation** | Not classified. |
| **Respiratory sensitization** | No data available. |
| **Skin sensitization** | Not a skin sensitizer. |
| **Germ cell mutagenicity** | Niclosamide ethanolamine salt: Ames test: Negative. |

**Carcinogenicity** Not classifiable as to carcinogenicity to humans.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Silicon dioxide (CAS 7631-86-9) 3 Not classifiable as to carcinogenicity to humans.

**Reproductive toxicity** Knowledge about reproductive effects is incomplete.

**Specific target organ toxicity - single exposure** No data available.

**Specific target organ toxicity - repeated exposure** No data available.

**Aspiration hazard** Not classified.

**Chronic effects** Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

## 12. Ecological information

**Ecotoxicity** Toxic to aquatic life.

| Components | | Species | Test Results |
|---|---|---|---|
| Niclosamide ethanolamine salt (CAS 1420-04-8) | | | |
| **Aquatic** | | | |
| Crustacea | EC50 | Water flea (Daphnia magna) | 0.14 - 0.27 mg/l, 48 hours |
| | LC50 | Daphnia | 0.38 mg/l, (70% niclosamide ethanolamine salt mixture) |
| Fish | LC50 | Channel catfish (Ictalurus punctatus) | 0.035 - 0.051 mg/l, 96 hours |
| | | Rainbow Trout | 0.34 mg/l, 96 Hours, (70% niclosamide ethanolamine salt mixture) |
| Polyoxyethylene-polyoxypropylene block copolymer (CAS 9003-11-6) | | | |
| **Aquatic** | | | |
| Crustacea | EC50 | Invertebrates (Invertebrates) | > 100 mg/l, 48 hours |
| Fish | LC50 | Fish | > 100 mg/l, 96 hours |

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** Has moderate potential to bioaccumulate. BCF: 46

**Mobility in soil** Niclosamide ethanolamine salt: Estimated Koc = 350. Moderate soil mobility.

**Other adverse effects** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## 13. Disposal considerations

**Disposal instructions** This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazardous waste code** Not regulated.

**Waste from residues / unused products** Dispose in accordance with all applicable regulations.

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

**DOT**

Not regulated as a hazardous material by DOT.

**IATA**

Not regulated as a dangerous good.

**IMDG**

Not regulated as a dangerous good.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** This substance/mixture is not intended to be transported in bulk.

## 15. Regulatory information

**US federal regulations** This product is not hazardous according to OSHA 29CFR 1910.1200. This material is not listed on the US TSCA 8(b) Inventory, and is exempt because it is FIFRA regulated.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

| | |
|---|---|
| **Hazard categories** | Immediate Hazard - No<br>Delayed Hazard - No<br>Fire Hazard - No<br>Pressure Hazard - No<br>Reactivity Hazard - No |
| **SARA 302 Extremely hazardous substance** | No |
| **SARA 311/312 Hazardous chemical** | No |

**SARA 313 (TRI reporting)**

Not regulated.

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

| | |
|---|---|
| **Safe Drinking Water Act (SDWA)** | Not regulated. |
| **Food and Drug Administration (FDA)** | Not regulated. |

**US state regulations** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**US. Massachusetts RTK - Substance List**

Niclosamide ethanolamine salt (CAS 1420-04-8)
Silicon dioxide (CAS 7631-86-9)

**US. New Jersey Worker and Community Right-to-Know Act**

Not regulated.

**US. Pennsylvania RTK - Hazardous Substances**

Niclosamide ethanolamine salt (CAS 1420-04-8)
Silicon dioxide (CAS 7631-86-9)

**US. Rhode Island RTK**

Not regulated.

**US. California Proposition 65**

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Not listed.

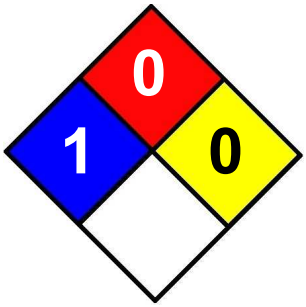
**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | No |

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

| | |
|---|---|
| **Issue date** | 04-November-2013 |
| **Revision date** | - |
| **Version #** | 01 |
| **NFPA Ratings** | |



| | |
|---|---|
| **References** | EPA: AQUIRE database<br>NLM: Hazardous Substances Data Base<br>US. IARC Monographs on Occupational Exposures to Chemical Agents<br>HSDB® - Hazardous Substances Data Bank<br>IARC Monographs. Overall Evaluation of Carcinogenicity<br>National Toxicology Program (NTP) Report on Carcinogens<br>ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices |
| **Disclaimer** | The information in the sheet was written based on the best knowledge and experience currently available. |

# SAFETY DATA SHEET

## 1. Identification

| | |
|---|---|
| **Product identifier** | **Bayluscide 20% Emulsifiable Concentrate; Bayluscide Emulsifiable Concentrate Lampricide** |
| **Other means of identification** | Not available. |
| **Synonyms** | Niclosamide ethanolamine salt mixture; clonitralide mixture |
| **Recommended use** | Industrial use. |
| **Recommended restrictions** | None known. |

**Manufacturer / Importer / Supplier / Distributor information**

| | |
|---|---|
| **Manufacturer** | Coating Place, Inc. |
| **Address** | 200 Paoli Street Verona, WI 53593<br>United States |
| **Telephone number** | 608-845-9521 |
| **Supplier** | U.S. Fish and Wildlife Service |
| **Address** | 1849 C Street NW Washington, D.C. 20240<br>United States |
| **Emergency telephone number** | Chemtrec (U.S.) 1-800-424-9300 |
| **Supplier** | Department of Fisheries and Oceans Canada - Sea Lamprey Control Centre |
| **Address** | 1219 Queen Street Sault Ste. Marie Ontario, Canada P6A 2E5 |
| **Emergency telephone number** | Canutec (Canada) 1-613-996-6666 |

## 2. Hazard(s) identification

| | | |
|---|---|---|
| **Physical hazards** | Not classified. | |
| **Health hazards** | Skin corrosion/irritation | Category 2 |
| | Serious eye damage/eye irritation | Category 1 |
| | Carcinogenicity | Category 2 |
| | Reproductive toxicity | Category 1B |
| | Specific target organ toxicity, single exposure | Category 3 respiratory tract irritation |
| | Specific target organ toxicity, repeated exposure | Category 2 (kidney, liver) |
| **OSHA defined hazards** | Not classified. | |

**Label elements**

| | |
|---|---|
| **Signal word** | Danger |
| **Hazard statement** | Causes skin irritation. Causes serious eye damage. Suspected of causing cancer. May damage the unborn child. May cause respiratory irritation. May cause damage to organs (kidney, liver) through prolonged or repeated exposure. |

**Precautionary statement**

| | |
|---|---|
| **Prevention** | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing mist. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. |
| **Response** | If exposed or concerned: Get medical advice/attention. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. |
| **Storage** | Store in a well-ventilated place. Keep container tightly closed. Store locked up. |
| **Disposal** | Dispose of contents/container in accordance with local/regional/national/international regulations. |

**Hazard(s) not otherwise classified (HNOC)** Not classified.

## 3. Composition/information on ingredients

**Mixtures**

| Chemical name | CAS number | % |
|---|---|---|
| 1-Methyl-2-pyrrolidinone | 872-50-4 | 64-68 |
| Niclosamide ethanolamine salt | 1420-04-8 | 16-18 |
| Coconut oil, reaction products with diethanolamine | 8051-30-7 | 12-14 |
| Diethanolamine | 111-42-2 | 1.1-1.3 |

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4. First-aid measures

**Inhalation** Remove victim to fresh air. If breathing is difficult, give oxygen. Get medical attention.

**Skin contact** Remove contaminated clothing and shoes. Wash the skin immediately with soap and water. Get medical attention if irritation develops and persists.

**Eye contact** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention immediately.

**Ingestion** Never give anything by mouth to a victim who is unconscious or is having convulsions. Immediately rinse mouth and drink plenty of water or milk. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Seek immediate medical attention or advice.

**Most important symptoms/effects, acute and delayed** Symptoms include itching, burning, redness, and tearing of eyes. Irritation of nose and throat. Cough. Skin irritation.

**Indication of immediate medical attention and special treatment needed** Treat symptomatically. Symptoms may be delayed.

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

**Suitable extinguishing media** Dry chemical powder, water spray.

**Unsuitable extinguishing media** None known.

**Specific hazards arising from the chemical** The product is not flammable. By heating and fire, toxic vapors/gases may be formed.

**Special protective equipment and precautions for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

**Fire-fighting equipment/instructions** Move containers from fire area if you can do so without risk.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Avoid inhalation of mist and contact with skin and eyes. For personal protection, see Section 8 of the SDS.

**Methods and materials for containment and cleaning up** Keep unnecessary personnel away.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use.

**Environmental precautions** Avoid discharge into drains, water courses or onto the ground unless authorized by permit.

## 7. Handling and storage

**Precautions for safe handling** Avoid inhalation of mist and contact with skin and eyes. Avoid contact during pregnancy/while nursing. Do not smoke and do not spray near a naked flame or other sources of ignition. Wash at the end of each work shift and before eating, smoking and using the toilet. Change contaminated clothing. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities** Keep upright. Store in tightly closed original container in a dry, cool and well-ventilated place. Protect from direct sunlight. Store away from incompatible materials. Do not reuse containers.

## 8. Exposure controls/personal protection

**Occupational exposure limits**

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Components | Type | Value | Form |
|---|---|---|---|
| Niclosamide ethanolamine salt (CAS 1420-04-8) | PEL | 5 mg/m3 | Respirable fraction. |
| | | 15 mg/m3 | Total dust. |

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

| Components | Type | Value | Form |
|---|---|---|---|
| Niclosamide ethanolamine salt (CAS 1420-04-8) | TWA | 5 mg/m3 | Respirable fraction. |
| | | 15 mg/m3 | Total dust. |
| | | 50 millions of particle | Total dust. |
| | | 15 millions of particle | Respirable fraction. |

**ACGIH**

| Components | Type | Value | Form |
|---|---|---|---|
| Diethanolamine (CAS 111-42-2) | STEL | 0.2 ppm | Inhalable fraction and vapor. |

**US. ACGIH Threshold Limit Values**

| Components | Type | Value | Form |
|---|---|---|---|
| Diethanolamine (CAS 111-42-2) | TWA | 1 mg/m3 | Inhalable fraction and vapor. |
| Niclosamide ethanolamine salt (CAS 1420-04-8) | TWA | 3 mg/m3 | Respirable particles. |
| | | 10 mg/m3 | Inhalable particles. |

**US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit (REL)**

| Components | Type | Value |
|---|---|---|
| Diethanolamine (CAS 111-42-2) | TWA | 15 mg/m3 |
| | | 3 ppm |

**US. Workplace Environmental Exposure Level (WEEL) Guides**

| Components | Type | Value |
|---|---|---|
| 1-Methyl-2-pyrrolidinone (CAS 872-50-4) | TWA | 40 mg/m3 |
| | | 10 ppm |

**Biological limit values**

**ACGIH Biological Exposure Indices**

| Components | Value | Determinant | Specimen | Sampling Time |
|---|---|---|---|---|
| 1-Methyl-2-pyrrolidinone (CAS 872-50-4) | 100 mg/l | 5-Hydroxy-N-methyl-2-pyrrolidone | Urine | * |

* - For sampling details, please see the source document.

**Exposure guidelines**

**US - California OELs: Skin designation**

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

**US ACGIH Threshold Limit Values: Skin designation**

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

**US WEEL Guides: Skin designation**

1-Methyl-2-pyrrolidinone (CAS 872-50-4) Can be absorbed through the skin.

**Appropriate engineering controls** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields.

| | |
|---|---|
| **Skin protection** | |
| **Hand protection** | Wear protective gloves. |
| **Other** | Normal work clothing (long sleeved shirts and long pants) is recommended. |
| **Respiratory protection** | If airborne concentrations exceed applicable exposure limits (PEL), wear NIOSH-approved respirators to maintain exposures below the PEL. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. |
| **Thermal hazards** | Not applicable. |
| **General hygiene considerations** | Observe any medical surveillance requirements. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice. |

## 9. Physical and chemical properties

| | |
|---|---|
| **Appearance** | Dark yellow-red liquid. |
| **Physical state** | Liquid. |
| **Form** | Liquid. |
| **Color** | Dark yellow-red. |
| **Odor** | Metallic. |
| **Odor threshold** | Not available. |
| **pH** | 9.8 1% suspension at 77°F (25°C) |
| **Melting point/freezing point** | Not available. |
| **Initial boiling point and boiling range** | Not available. |
| **Flash point** | 201.6 °F (94.2 °C) |
| **Evaporation rate** | Not available. |
| **Flammability (solid, gas)** | Not applicable. |
| **Upper/lower flammability or explosive limits** | |
| **Flammability limit - lower (%)** | Not available. |
| **Flammability limit - upper (%)** | Not available. |
| **Explosive limit - lower (%)** | Not available. |
| **Explosive limit - upper (%)** | Not available. |
| **Vapor pressure** | Not available. |
| **Vapor density** | Not available. |
| **Relative density** | 1.09 68°F (20°C) |
| **Solubility(ies)** | Not applicable. |
| **Partition coefficient (n-octanol/water)** | Not available. |
| **Auto-ignition temperature** | Not available. |
| **Decomposition temperature** | Not available. |
| **Viscosity** | 12.2 cps average at 30 RPM at 68°F (20°C) |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity** | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| **Chemical stability** | Stable at normal conditions. |
| **Possibility of hazardous reactions** | Hazardous polymerization does not occur. |
| **Conditions to avoid** | Heat. |
| **Incompatible materials** | Strong alkalis. Strong acids. Strong oxidizing agents. |
| **Hazardous decomposition products** | Carbon oxides. Nitrogen oxides. Ammonia. Hydrogen chloride. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Ingestion** | Ingestion may cause irritation and malaise. |
| **Inhalation** | Vapors and mist may irritate throat and respiratory system and cause coughing. |

**Skin contact** Causes skin irritation.

**Eye contact** Causes serious eye damage.

**Symptoms related to the physical, chemical and toxicological characteristics** Symptoms include itching, burning, redness, and tearing of eyes. Irritation of nose and throat. Cough. Skin irritation.

**Information on toxicological effects**

**Acute toxicity** Ingestion may cause irritation and malaise.

| Components | Species | Test Results |
|---|---|---|
| 1-Methyl-2-pyrrolidinone (CAS 872-50-4) | | |
| **Acute** | | |
| *Dermal* | | |
| LD50 | Rabbit | 8000 mg/kg |
| *Inhalation* | | |
| LC50 | Rat | > 5.1 mg/l |
| *Oral* | | |
| LD50 | Rat | 3914 mg/kg |
| Diethanolamine (CAS 111-42-2) | | |
| **Acute** | | |
| *Dermal* | | |
| LD50 | Rabbit | 11.9 ml/kg |
| *Oral* | | |
| LD50 | Rat | 710 mg/kg |
| Niclosamide ethanolamine salt (CAS 1420-04-8) | | |
| **Acute** | | |
| *Oral* | | |
| LD50 | Rat | > 5000 mg/kg |

**Skin corrosion/irritation** Causes skin irritation.

**Serious eye damage/eye irritation** Causes serious eye damage.

**Respiratory sensitization** No data available.

**Skin sensitization** Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

**Germ cell mutagenicity** Niclosamide ethanolamine salt: Ames test: Negative.

**Carcinogenicity** Suspected of causing cancer.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Diethanolamine (CAS 111-42-2) 2B Possibly carcinogenic to humans.

**Reproductive toxicity** May damage the unborn child.
Avoid contact during pregnancy/while nursing.

**Specific target organ toxicity - single exposure** May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure** May cause damage to organs (kidney, liver) through prolonged or repeated exposure.

**Aspiration hazard** No data available.

## 12. Ecological information

**Ecotoxicity** Toxic to aquatic life.

| Components | | Species | Test Results |
|---|---|---|---|
| 1-Methyl-2-pyrrolidinone (CAS 872-50-4) | | | |
| **Aquatic** | | | |
| Crustacea | EC50 | Daphnia magna | > 1000 mg/l, 24 hours |
| Diethanolamine (CAS 111-42-2) | | | |
| **Aquatic** | | | |
| Crustacea | EC50 | Water flea (Ceriodaphnia dubia) | 61.8 - 86.04 mg/l, 48 hours |
| Fish | LC50 | Fathead minnow (Pimephales promelas) | >= 100 mg/l, 96 hours |

| Components | | Species | Test Results |
|---|---|---|---|
| Niclosamide ethanolamine salt (CAS 1420-04-8) | | | |
| **Aquatic** | | | |
| Crustacea | EC50 | Water flea (Daphnia magna) | 0.14 - 0.27 mg/l, 48 hours |
| | LC50 | Daphnia | 0.38 mg/l, (70% niclosamide ethanolamine salt mixture) |
| Fish | LC50 | Channel catfish (Ictalurus punctatus) | 0.035 - 0.051 mg/l, 96 hours |
| | | Rainbow Trout | 0.34 mg/l, 96 Hours, (70% niclosamide ethanolamine salt mixture) |

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** Niclosamide ethanolamine salt: BCF: 46 Has moderate potential to bioaccumulate.

**Partition coefficient n-octanol / water (log Kow)**

| | |
|---|---|
| 1-Methyl-2-pyrrolidinone (CAS 872-50-4) | -0.54 |
| Diethanolamine (CAS 111-42-2) | -1.43 |

**Mobility in soil** The product is partly miscible with water and may spread in the aquatic environment. Niclosamide ethanolamine salt: Estimated Koc = 350. Moderate soil mobility.

**Other adverse effects** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## 13. Disposal considerations

**Disposal instructions** This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazardous waste code** Not regulated.

**Waste from residues / unused products** Dispose in accordance with all applicable regulations.

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

**DOT**

Not regulated as a hazardous material by DOT.

**IATA**

Not regulated as a dangerous good.

**IMDG**

Not regulated as a dangerous good.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** This substance/mixture is not intended to be transported in bulk.

## 15. Regulatory information

**US federal regulations** This product is hazardous according to OSHA 29 CFR 1910.1200. This material is not listed on the US TSCA 8(b) Inventory, and is exempt because it is FIFRA regulated.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Diethanolamine (CAS 111-42-2) LISTED

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance** No

**SARA 311/312 Hazardous chemical** Yes

**SARA 313 (TRI reporting)**

| Chemical name | CAS number | % by wt. |
|---|---|---|
| 1-Methyl-2-pyrrolidinone | 872-50-4 | 64-68 |
| Diethanolamine | 111-42-2 | 1.1-1.3 |

**SARA 313 (TRI reporting)**

Not regulated.

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Diethanolamine (CAS 111-42-2)

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**Food and Drug Administration (FDA)** Not regulated.

**US state regulations** WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**US. Massachusetts RTK - Substance List**

1-Methyl-2-pyrrolidinone (CAS 872-50-4)
Diethanolamine (CAS 111-42-2)
Niclosamide ethanolamine salt (CAS 1420-04-8)

**US. New Jersey Worker and Community Right-to-Know Act**

| | |
|---|---|
| 1-Methyl-2-pyrrolidinone (CAS 872-50-4) | 500 lbs |
| Diethanolamine (CAS 111-42-2) | 500 lbs |

**US. Pennsylvania RTK - Hazardous Substances**

1-Methyl-2-pyrrolidinone (CAS 872-50-4)
Diethanolamine (CAS 111-42-2)
Niclosamide ethanolamine salt (CAS 1420-04-8)

**US. Rhode Island RTK**

1-Methyl-2-pyrrolidinone (CAS 872-50-4)
Diethanolamine (CAS 111-42-2)

**US. California Proposition 65**

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

1-Methyl-2-pyrrolidinone (CAS 872-50-4)
Diethanolamine (CAS 111-42-2)

**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | No |

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

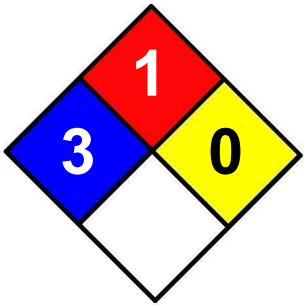
## 16. Other information, including date of preparation or last revision

**Issue date** 28-October-2013

**Revision date** -

**Version #** 01

**NFPA Ratings**




**References**

EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

**Disclaimer** The information in the sheet was written based on the best knowledge and experience currently available.