

SAFETY DATA SHEET

1. Identification

Product identifier Bayluscide Technical; Bay 73 Technical
Other means of identification Not available.
Recommended use Industrial use.
Recommended restrictions None known.
Manufacturer / Importer / Supplier / Distributor information
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
Canutec (Canada) 1-613-996-6666

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Acute toxicity, inhalation Category 4
Serious eye damage/eye irritation Category 2A
OSHA defined hazards Not classified.

Label elements



Signal word Warning
Hazard statement Causes serious eye irritation. Harmful if inhaled.
Precautionary statement
Prevention Avoid breathing dust. Wear eye/face protection. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area.
Response If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Storage Store away from incompatible materials.
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	%
Niclosamide ethanolamine salt	1420-04-8	>95.4
2-chloro-4-nitroaniline	121-87-9	0.4-1.5
5-chloro-2-hydroxybenzoic acid	321-14-2	0.15-1.5

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 Do not rub eyes. 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	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	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
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	Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. 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. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Nonsparking tools should be used. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. 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. Minimize dust generation and accumulation. Add material slowly when mixing with water. Do not add water to the material; instead, add the material to the water. 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. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

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/m ³	Respirable fraction.
		15 mg/m ³	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/m ³	Respirable fraction.
		15 mg/m ³	Total dust.

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

Components	Type	Value	Form
		50 millions of particle	Total dust.
		15 millions of particle	Respirable fraction.

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.

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. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).
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 CFR 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	Bright yellow (with faint green tint) solid.
Physical state	Solid.
Form	Solid.
Color	Bright yellow (with faint green tint).
Odor	Metallic.
Odor threshold	20 (on a scale of 1 to 100)
pH	9.27 (1% aqueous solution at 23°C/73°F)
Melting point/freezing point	408 - 419 °F (208.89 - 215 °C)
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	<0.00001 Pa (25°C/77°F)
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	0.0283 g/l (20°C/68°F) in water.
Partition coefficient (n-octanol/water)	5.33 LogKow
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	0.45 g/ml (23°C/73°F)

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 acids. Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides. Nitrogen oxides. Hydrogen chloride.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Ingestion may cause irritation and malaise.
Inhalation	Harmful if inhaled.
Skin contact	Dust may irritate skin.
Eye contact	Causes serious 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 Harmful if inhaled.

Components	Species	Test Results
2-chloro-4-nitroaniline (CAS 121-87-9)		
Acute		
<i>Oral</i>		
LD50	Mouse	1250 mg/kg
	Rat	6430 mg/kg
Niclosamide ethanolamine salt (CAS 1420-04-8)		
Acute		
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg
Skin corrosion/irritation	Not classified.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
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.	
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.
Further information	Contains 2-chloro-4-nitroaniline: may cause transformation of hemoglobin to methemoglobin, nitrosulfhemoglobin, sulfhemoglobin and a decrease in oxyhemoglobin in animal studies.

12. Ecological information

Ecotoxicity Very toxic to aquatic life.

Components		Species	Test Results
2-chloro-4-nitroaniline (CAS 121-87-9)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1.4 - 2 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	17.7 - 20.2 mg/l, 96 hours
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 Has moderate potential to bioaccumulate. BCF: 45.

Partition coefficient n-octanol / water (log Kow)

Bayluscide Technical; Bay 73 Technical (CAS Mixture) 5.33, LogKow

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

UN number	UN3077
UN proper shipping name	Environmentally hazardous substances, solid, n.o.s.
Transport hazard class(es)	9
Subsidiary class(es)	-
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	8, 146, 335, A112, B54, IB8, IP3, N20, T1, TP33
Packaging exceptions	155
Packaging non bulk	213
Packaging bulk	240

IATA

UN number	UN3077
UN proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Transport hazard class(es)	9
Subsidiary class(es)	-
Packaging group	III
Environmental hazards	No

Labels required Not available.
ERG Code 9L

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN3077
UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Transport hazard class(es) 9
Subsidiary class(es) -
Packaging group III
Environmental hazards

Marine pollutant Yes

Labels required Not available.

EmS F-A, S-F

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 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)

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

Niclosamide ethanolamine salt (CAS 1420-04-8)

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

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

Niclosamide ethanolamine salt (CAS 1420-04-8)

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).

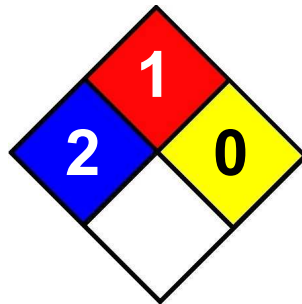
16. Other information, including date of preparation or last revision

Issue date 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.