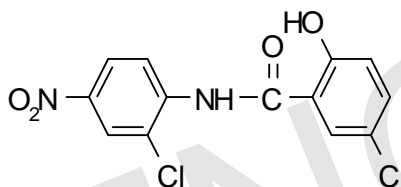


Material Safety Data Sheet

Product Name: Niclosamide

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: Niclosamide
CAS: 50-65-7
Molecular Weight: 327.1
Chemical Name: 2',5-dichloro-4'-nitrosalicylanilide
Chemical Formulation: $C_{13}H_8Cl_2N_2O_4$
Chemical Structure:



Uses: Control of golden apple snail in rice. Control of schistosomiasis and fascioliasis in man by killing fresh-water snails which act as intermediate hosts. Also used for veterinary control of tapeworm infestations

Manufacturer: Nanjing Essence Fine-Chemical Co., Ltd
Address: 5th Floor, Suoye Road 18#, Nanjing, China
Telephone Number: +86 25 86465997
 +86 25 86466001
Fax Number: +86 25 86455985
Website: www.essencechem.com

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component Name</u>	<u>CAS-No.</u>	<u>Average by Weight</u>
Niclosamide	50-65-7	70%
Dispersant		8%
Wetting agent		2%
Carrier		Add up to

SECTION 3. HAZARDS IDENTIFICATION

Eye Contact:	Severe irritant to eye.
Skin Contact:	Moderate irritant to skin.
Ingestion:	If ingest, harmful.
Inhalation:	If inhale, harmful.

SECTION 4. FIRST AID MEASURES

Eye Contact:	If eyes are contaminated flush with clean/saline water for about 10-15 minutes.
Skin Contact:	If clothing and skin are contaminated, remove the clothes and wash the contaminated skin with copious amount of soap and water.
Inhalation:	If inhaled, remove the patient to fresh air for a rest.
Swallowing:	If swallowed, induce vomiting by tickling the back of throat. Repeat it until the vomitus is clear. Do not induce vomiting if the patient is unconscious.

SECTION 5. FIRE FIGHTING MEASURES

Fire Fighting Instructions:	Measures of personal protection: Safety glasses or goggles, rubber gloves, shoes plus socks, long-sleeved shirt, and long pants.
Hazardous Combustion Products:	To be used: water spray, foam, dry chemical powder and carbon oxide.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Safe Guards:	Personal cautions: safety glasses or goggles, rubber gloves, shoes plus socks, longsleeved shirt, and long pants.
Cleaning Methods:	Pick up for sweeping or asplation avoiding the powder formation. Transfer to a properly labelled deposit that will be closed and sealed until the recovery of climination of the product. Prevent the contamination of the floor and of beds of water.

SECTION 7. HANDLING AND STORAGE

Precautions:	Keep away from foodstuffs, empty foodstuff containers and animal's food. Avoid contact with mouth, eyes and skin.
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Avoid inhalation the spray mist. Spray in the direction of wind.
Do not eat, chew, drink, or smoke tobacco while spraying.
Wash thoroughly the contaminated cloths and parts of the body after spraying.
Wear full protective clothing while mixing and spraying.

Storage: Observe the rules contained in the VCI concept for separate/common storage. For reasons of quality assurance, keep dry at temperatures under 40 °C. Store so that unauthorised persons do not have access. Keep away from food, drink and animal feeding stuffs

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Industrial hygiene: use good industrial hygiene. Wear face shield or goggles, elbow length PVC gloves, cotton overalls buttoned to the neck and wrist, washable hat and half face respirator with dust and vapour cartridge. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

Personal Protection: Respiratory protection: approved respirator
Protective gloves: chemical resistant gloves
Eye protection: goggles

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Yellow to orange
Odor: Slight characteristic smell
Melting Point: 165 °C
Bulk Density: 280 ml/100g
PH: 8.56
Flash Point: Non-flammable
Partition coefficient: 0.99

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions. Stable at 52 °C (highest storage temperature tested). Relatively stable to u.v. light.
Conditions to Avoid: Fire and heat.
Incompatibility: Not applicable.

Hazardous Products of Not applicable.

Decomposition:

Hazardous Decomposition: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

Oral: LD50 oral, rat (male): 3552 mg/kg
Dermal: LD50 dermal, rat: > 4000 mg/kg
Inhalation: LC50 inhalation, rat (male): 3,6–8,2 mg/l, Dustable powder, 4 h of exposure
Skin irritant: Slightly irritant.
Eye irritant: Slightly irritant.

SECTION 12. ECOLOGICAL INFORMATION

Ecological Information : LC50: 0,05 ppm (48 h); rainbow trout (*Salmo gairdneri*) (Bayer)
LC50: 0,082 ppm (48 h); (*Lepomis macrochirus*) (Bayer)
LC50: 0,279 ppm (48 h); goldfish (*Carassius auratus*) (Bayer)
LC50: 0,235 ppm (48 h); carp (*Cyprinus carpio*) (Bayer)

SECTION 13. DISPOSAL CONSIDERATIONS

Waster Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the hazardous waste representative at the nearest EPA Regional Office for guidance.

Container Disposal: Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Triple rinse (or equivalent) containers, then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill. Disposal must be in compliance with all Federal, State and local regulations. Contact your local, state or federal environmental agency for specific rules.

SECTION 14. TRANSPORT INFORMATION

Class 9

UN: 3077

PG: III

Declaration for shipment by air: Environmentally hazardous substance, solid, n.o.s.(83%
NICLOSAMIDE ETHANOLAMINE)

SECTION 15. REGULATORY INFORMATION

Symbol: Xn, hazard description: harmful

Contains: 83,1 % niclosamide ethanolamine salt (clonitralide)

R 20: Harmful by inhalation.

R 36: Irritating to eyes.

SECTION 16. OTHER INFORMATION

Wettable powder

Application: molluscicide

The Declaration for land shipment is reproduced in German and applies in Europe and some of its adjoining states. It has been translated into English as follows:

3077, Environmentally hazardous substance, solid, n.o.s.

(83% NICLOSAMIDE ETHANOLAMINE SALT (POWDER))