

MATERIAL SAFETY DATA SHEET

DBNPA

Revision date : 04/03/2007

1. Identification of the substance & the company

Chemical name 2,2-Dibromo-3-nitrilopropionamide

Type of product and use A Microbiocidal bactericide, fungicide, algicide and slimicide, in treating industrial cooling water systems and pulp & paper mills.

Company SPE Chemicals Co.,Ltd

Room 1615, No 345 Jinxiang Road ,Pudong,Shanghai,China 201206

Tel No: 021-51386314

2.Composition / information on ingredient

Components	Weight%	Annex no.	EINECS NO.	Classification	Notes
2,2-Dibromo-3-Nitrilopropionamide	98		2335397	T;R23 Xi;R41 Xn;R22 Xi;R38 N;R50	

3.Hazards identification

Adverse human health effects

Toxic by inhalation

Risk of serious damage to eyes

Irritant to skin

Environmental effect

Very toxic to aquatic environment

4.First-aid measures

Eye contact Holding the eyelids apart, flush eyes promptly with copious flowing water for at least 20 minutes. Get medical attention immediately.

Skin contact Remove contaminated clothing. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Wash clothing before re-use.

Get medical attention if irritation persists.

Inhalation In case of dust inhalation or breathing fumes released from heated material, remove person to fresh air.

Keep him quiet and warm. Apply artificial respiration if necessary and get medical attention immediately.

Ingestion If swallowed, wash mouth thoroughly with plenty of water and give water to drink. Get medical attention immediately.

5.Fire- fighting measures

Flash point None

Auto-ignition temperature Not applicable

Suitable extinguishing media Carbon dioxide, dry chemicals, foam, water, spray (fog).

Fire fighting procedure Cool containers with water spray.

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) in positive pressure mode.

Unusual fire and explosion

Hazards Dust may form a weak explosive mixture with air (class St), but is not sensitive to ignition from electrostatic discharges. releasing

Will decompose from ca. 160°C releasing poisonous and corrosive fumes of HBr, Br₂ and Nox.

6. Accidental release measures

Personal precautions Wear self-contained breathing apparatus, full PVC clothing, PVC gloves and boots.

Methods for cleaning up Sweep up, place in a bag and hold for waste disposal or possible re-use. Avoid raising dust.

Ventilate area and wash spill. After material pickup is complete.

7. Handling and storage

Handling Keep containers tightly closed.

Avoid producing or diffusing dust into the air.

Storage Store in a dry, cool, well-ventilated and shaded area, away from heat sources away from incompatible materials (see "materials to avoid").

8. Exposure controls / personal protection

Exposure limits:

Components	ACGIH-TLV Data	OSHA(PEL)Data
2,2-Dibromo-3-nitrilopropionamide 10222-01-2	Not determined	Not determined

Ventilation requirements Ventilation must be sufficient to maintain dust below 10 mg/m³ 8 hours TWA

(ACGIH recommended Threshold Limit Value for total dust).

Personal protective equipment:

-Respiratory protection Dust respirator

-Hand protection Protective gloves

-Eye protection Chemical safety goggles

-Skin and body protection Body covering clothes and boots

Hygiene measures Safety shower and eye bath should be provided. Do not eat, drink or smoke until after-work showering and changing clothes.

9. Physical and chemical properties

Appearance White to off-white crystalline solid or powder of mild antiseptic odour

Melting point/range 123-125°C

Boiling point/range Not determinable, decomposes above 160°C

Vapour pressure 8.25×10^{-4} mm Hg at 25°C

Vapor density Not applicable under standard conditions

Evaporation rate(ether=1) Not applicable under standard conditions

Solubility:

-Solubility in water 17 ± 0.05g/l at 25.7°C

-Solubility in other solvents acetone-35g/100g

Ethanol-25g/100g

Dimethyl formamide-120g/100g

Polyethylene glycol(Mw 200)-120g/100g

Specific gravity	2.375 at 21°C
Partition coefficient (n-octanol/water)	Equivalent k_{ow} =6.3
Decomposition temperature	From ca.160°C
10.Stability and reactivity	
Stability	Stable under normal conditions.
Materials to avoid	Oxidizing agents,reducing agents
Conditions to avoid	Keep away from light and heat
Hazardous decomposition Products	Br ₂ ,HBr,CNBr,NO _x ,C ₂ H ₅ Br, CH ₃ Br
Hazardous polymerization	Will not occur
11.Toxicological information	
Acute toxicity:	
-Rat oral LD50	308mg /kg
-Rabbit dermal LD50	>2000mg /kg
-Rat inhalation LC50	0.32mg/1/4 hour
-Eye irritation(rabbit)	Corrosive
-Dermal irritation(rabbit)	Moderate irritant
-Dermal sensitization -(guinea pig)	Weak sensitizer
Sub-chronic toxicity:	
-NOEL	5mg/kg/day(13 weeks oral,rat)
Effects of overexposure:	
-Ocular	Corrosive
-Dermal	Irritant May cause skin irritation
-Inhalation	Irritant to upper respiratory tract In severe cases pulmonary oedema may be developed
-Ingestion	Corrosive by ingestion. Abdominal pain,nausea,vomiting and diarrhea
Chronic toxicity	Not available
Mutagenicity	Not mutagenic by the Ames Test
Genotoxicity	DBNPA did not induce DNA repair synthesis in the hepatocytes of male rats in vitro.
	Not clastogenic in chromosome aberration test with Human lymphocytes.
	Not clastogenic in chromosome aberration test with Chinese hamster cells.
Carcinogenicity	Not known to be a carcinogen. Not classified by IAPC. Not included in NTP 8 th Report on Carcinogens.
Reproductive toxicity	In a 2-generation study in rats, the NOEL for reproduction parameters was ≥ 30 mg/kg/day.

Teratogenicity Not teratogenic. The NOAEL (for fetal toxicity in rabbits)=10mg/kg/day.

12. Ecological information

Aquatic toxicity:

-96 Hour-LC50, Fish 2.3 mg/l(Rainbow trout)
3.4 mg/l(Sheepshead minnow)
2.3 mg/l(Bluegill sunfish)
0.72mg/l(Mysid chrimp)
0.37mg/l(Eastern oyster)

-48 Hour-EC50, Daphnia magna 0.86mg/l

Avian toxicity:

-Oral LD50, Bobwhite quail 354mg/kg

-Dietary LC50, Mallard duck >5620PPM

-Dietary LC50, Bobwhite quail >5620ppm

13. Disposal considerations

Waste disposal Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Observe all federal, state and local environmental regulations when disposing of this material.

14. Transportation information

UN No. 2811

IMO proper shipping name: Toxic solid, Organic, n.o.s

Class: 6.1 Toxic substances

Label: TOXIC(6.1)

Marking: MARINE POLLUTANT

Packing Group: III

(IMDG CODE – page. 6270-6, amdt. 29-98)

ADR/RID Class and item Nos.: 6.1.25°(b)

Danger Label Model No: 6.1

Hazard/Substance Nos: 60/2811

ICAO/IATA Hazard Label(s): Toxic

Class: 6.1

DOT Proper shipping name: Toxic solid, organic, n.o.s.

Class: 6.1-Poisons

Label: POISON(6)

Packing Group: III

15. Regulatory information

EEC Reported in EINECS (No. 2335397)

-Indication of danger Toxic(T) and Dangerous to the environment (N) symbols required

-Risk Phrases R23: Toxic by inhalation.

R22: Harmful if swallowed.

R41: Risk of serious damage to eyes.

R38: Irritating to skin.

R50: Very toxic to aquatic organisms.

S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 28: After contact with skin, wash immediately with plenty of water and soap

S 36/37/39 : Wear suitable protective clothing, gloves and eye/face protection.

S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label when possible).

S 60: This material and its container must be disposed of as hazardous waste

Australia Listed in AICS

USA This product is registered under FIFRA

Canada Listed in NDSL

Japan Listed in MITI (ENCS No.2-2795)

South Korea Listed in ECL (KE-09944)

16. Other information

The information in this Material Safety Data Sheet should be provided to all who will use, handle, store, transport, or otherwise be exposed to this product.

This information has been prepared for the guidance of plant engineering, operations and management and for persons working with or handling this product.

Additionally, if this Material Safety Data Sheet is more than three years old, you should contact the manufacturer at the phone number listed below to make certain that this sheet is current.

Manufacturer Disclaimer

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