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1. IDENTIFICATION

Product name: Dibromoacetonitrile
CAS No. : 3252-43-5
Brand: Macklin
Company: Shanghai Macklin Biochemical Co.,Ltd.
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Revision date: 2019/12/12

2. HAZARDS IDENTIFICATION

GHS classification

PHYSICAL HAZARDS

HEALTH HAZARDS

ENVIRONMENTAL HAZARDS

GHS label elements, including precautionary statements

Pictograms or hazard symbols

Signal word

Danger

Hazard statements

H301 Toxic if swallowed
H319 Causes serious eye irritation
H400 Very toxic to aquatic life

Precautionary statements

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name
Dibromoacetonitrile

Components:Dibromoacetonitrile
CAS No.:3252-43-5
Chemical Formula:Br_2CHCN

4. FIRST AID MEASURES

4.1
Description of necessary first-aid measures
If inhaled
Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.
Following skin contact
Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a

doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2

Most important symptoms/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to this compound include irritation of the eyes, mucous membranes and upper respiratory tract, burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. It is a lachrymator. ACUTE/CHRONIC HAZARDS: This compound may be fatal by ingestion, inhalation or skin absorption. It is an irritant of the eyes, mucous membranes and upper respiratory tract. It is also a lachrymator. When heated to decomposition it emits highly toxic fumes of carbon monoxide, carbon dioxide, nitrogen oxides, bromine, hydrogen bromide gas and cyanides. (NTP, 1992)

4.3

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

Immediate first aid: Remove patient from contact with the material. Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Cyanide and related compounds

5. FIRE-FIGHTING MEASURES

5.1

Suitable extinguishing media

FIREFIGHTING. Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

5.2

Specific hazards arising from the chemical

Literature sources indicate that this compound is nonflammable. (NTP, 1992)

5.3

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

6.1

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours.Avoid contacting with skin and eye. Use personal protective equipment.Wear chemical impermeable gloves. Ensure adequate ventilation.Remove all sources of ignition. Evacuate personnel to safe areas.Keep people away from and upwind of spill/leak.

6.2

Environmental precautions

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

6.3

Methods and materials for containment and cleaning up

Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Keep tightly closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure limit values
no data available
Biological limit values
no data available
Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Personal protective equipment

Eye/face protection
Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).
Skin protection
Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Respiratory protection
If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.
Thermal hazards
no data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state
PHYSICAL DESCRIPTION: Clear amber oily liquid. (NTP, 1992)
Colour
Liquid
Odour
no data available
Melting point/freezing point
no data available
Boiling point or initial boiling point and boiling range
163.1ºC at 760mmHg
Flammability
no data available
Lower and upper explosion limit/flammability limit
no data available
Flash point
31.9ºC
Auto-ignition temperature
no data available
Decomposition temperature
no data available
pH
no data available
Kinematic viscosity
no data available
Solubility
5 to 10 mg/mL at 70.7° F (NTP, 1992)
Partition coefficient n-octanol/water
log Kow = 0.47 (est)
Vapour pressure
2 mm Hg at 122° F ; 15 mm Hg at 158° F; 48 mm Hg at 203° F (NTP, 1992)
Density and/or relative density
2.434g/cm3
Relative vapour density
no data available

Particle characteristics
no data available

10. STABILITY AND REACTIVITY

10.1
Reactivity
This chemical may be sensitive to prolonged exposure to air and light. Slightly soluble in water.
10.2
Chemical stability
no data available
10.3
Possibility of hazardous reactions
DIBROMOACETONITRILE is incompatible with strong acids, strong bases, strong oxidizing agents and strong reducing agents. (NTP, 1992). Nitriles may polymerize in the presence of metals and some metal compounds. They are incompatible with acids; mixing nitriles with strong oxidizing acids can lead to extremely violent reactions. Nitriles are generally incompatible with other oxidizing agents such as peroxides and epoxides. The combination of bases and nitriles can produce hydrogen cyanide. Nitriles are hydrolyzed in both aqueous acid and base to give carboxylic acids (or salts of carboxylic acids). These reactions generate heat. Peroxides convert nitriles to amides. Nitriles can react vigorously with reducing agents. Acetonitrile and propionitrile are soluble in water, but nitriles higher than propionitrile have low aqueous solubility. They are also insoluble in aqueous acids.
10.4
Conditions to avoid
no data available
10.5
Incompatible materials
no data available
10.6
Hazardous decomposition products
When heated to decomposition it emits very toxic fumes of /Nitrogen oxides/, /Hydrogen Bromide/ and /Cyanide/.

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Oral: LD50 Mouse (male) oral 289 mg/kg[Hayes JR et al; Environ Health Perspect 69: 183-202 (1986)] Full text: PMC1474335
Inhalation: no data available
Dermal: no data available
Skin corrosion/irritation
no data available
Serious eye damage/irritation
no data available
Respiratory or skin sensitization
no data available
Germ cell mutagenicity
no data available
Carcinogenicity
Evaluation: No epidemiological data relevant to the carcinogenicity of dibromoacetonitrile were available. There is inadequate evidence in experimental animals for the carcinogenicity of dibromoacetonitrile. Overall evaluation: Dibromoacetonitrile is not classifiable as to its carcinogenicity to humans (Group 3).
Reproductive toxicity
no data available
STOT-single exposure
no data available
STOT-repeated exposure
no data available
Aspiration hazard

no data available

12. ECOLOGICAL INFORMATION

12.1

Toxicity

Toxicity to fish: LC50; Species: Pimephales promelas (Fathead minnow, standard length 20.5 mm, weight 150 mg); Conditions: freshwater, static, 16.6-17.0 deg C, pH 7.8-8.3, hardness 98-113 mg/L CaCO3, alkalinity 75-87 mg/L CaCO3, dissolved oxygen 8.7-9.6 mg/L; Concentration: 710 ug/L for 24 hr (95% confidence interval: 650-780 ug/L) /96% purity

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

12.2

Persistence and degradability

Dibromoacetonitrile is a by product of water chlorination and hydrolyzes quickly, therefore biodegradation is not expected to be an important fate in the environment. (SRC)

12.3

Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for dibromoacetonitrile(SRC), using an estimated log Kow of 0.47(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

12.4

Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of dibromoacetonitrile can be estimated to be 13(SRC). According to a classification scheme(2), this estimated Koc value suggests that dibromoacetonitrile is expected to have very high mobility in soil.

12.5

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

Product

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

Contaminated packaging

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

14. TRANSPORT INFORMATION

14.1

UN Number

ADR/RID: UN3275 (For reference only, please check.)

IMDG: UN3275 (For reference only, please check.)

IATA: UN3275 (For reference only, please check.)

14.2

UN Proper Shipping Name

ADR/RID: NITRILES, TOXIC, FLAMMABLE, N.O.S. (For reference only, please check.)

IMDG: NITRILES, TOXIC, FLAMMABLE, N.O.S. (For reference only, please check.)

IATA: NITRILES, TOXIC, FLAMMABLE, N.O.S. (For reference only, please check.)

14.3

Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)

IMDG: 6.1 (For reference only, please check.)

IATA: 6.1 (For reference only, please check.)

14.4

Packing group, if applicable

ADR/RID: I (For reference only, please check.)
IMDG: I (For reference only, please check.)
IATA: I (For reference only, please check.)
14.5
Environmental hazards
ADR/RID: Yes
IMDG: Yes
IATA: Yes
14.6
Special precautions for user
no data available
14.7
Transport in bulk according to IMO instruments
no data available

15. REGULATORY INFORMATION

15.1
Safety, health and environmental regulations specific for the product in question
Chemical name
Common names and synonyms
CAS number
EC number
Dibromoacetonitrile
Dibromoacetonitrile
3252-43-5
221-843-2
European Inventory of Existing Commercial Chemical Substances (EINECS)
Listed.
EC Inventory
Listed.
United States Toxic Substances Control Act (TSCA) Inventory
Listed.
China Catalog of Hazardous chemicals 2015
Not Listed.
New Zealand Inventory of Chemicals (NZIoC)
Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)
Listed.
Vietnam National Chemical Inventory
Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)
Listed.
Korea Existing Chemicals List (KECL)
Not Listed.

16. OTHER INFORMATION

This SDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority.The products are supposed to be used promptly after purchase in consideration of safety.Some new information or amendments may be added afterwards.If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only.In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with

specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal.Safe usage conditions shall be set up on each user's own responsibility.