

## Chemical Safety Data Sheet MSDS / SDS

**2,2-Dibromo-2-cyanoacetamide**

Revision Date:2024-11-02 Revision Number:1

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****Product identifier**

Product name : 2,2-Dibromo-2-cyanoacetamide  
CBnumber : CB7355147  
CAS : 10222-01-2  
EINECS Number : 233-539-7  
Synonyms : DBNPA,2,2-Dibromo-3-Nitrilopropionamide

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

**Company Identification**

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

**SECTION 2: Hazards identification****GHS Label elements, including precautionary statements**

Symbol(GHS)



Signal word

Danger

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P284 Wear respiratory protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

P310 Immediately call a POISON CENTER or doctor/physician.  
P314 Get medical advice/attention if you feel unwell.  
P391 Collect spillage. Hazardous to the aquatic environment  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.  
P501 Dispose of contents/container to.....

#### **Hazard statements**

H301 Toxic if swallowed  
H314 Causes severe skin burns and eye damage  
H315 Causes skin irritation  
H317 May cause an allergic skin reaction  
H318 Causes serious eye damage  
H330 Fatal if inhaled  
H373 May cause damage to organs through prolonged or repeated exposure  
H400 Very toxic to aquatic life  
H410 Very toxic to aquatic life with long lasting effects

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## SECTION 3: Composition/information on ingredients

### **Substance**

Product name	: 2,2-Dibromo-2-cyanoacetamide
Synonyms	: DBNPA,2,2-Dibromo-3-Nitrilopropionamide
CAS	: 10222-01-2
EC number	: 233-539-7
MF	: C <sub>3</sub> H <sub>2</sub> Br <sub>2</sub> N <sub>2</sub> O
MW	: 241.87

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## SECTION 4: First aid measures

### **Description of first aid measures**

#### **General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### **If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### **In case of skin contact**

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

#### **In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### **If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### Indication of any immediate medical attention and special treatment needed

No data available

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## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NOx), Hydrogen bromide gas Combustible.

### Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### Further information

No data available

### NFPA 704



■ HEALTH 3 Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

■ FIRE 1 Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. [mineral oil](#), ammonia)

■ REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N<sub>2</sub>](#))

□ SPEC.

□ HAZ.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

### **Environmental precautions**

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

### **Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### **Reference to other sections**

For disposal see section 13.

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## **SECTION 7: Handling and storage**

### **Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

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

Keep container tightly closed in a dry and well-ventilated place. Store in cool place. Moisture sensitive.

### **Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## **SECTION 8: Exposure controls/personal protection**

### **control parameter**

#### **Hazard composition and occupational exposure limits**

Does not contain substances with occupational exposure limits.

### **Exposure controls**

#### **Appropriate engineering controls**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

#### **Personal protective equipment**

##### **Eye/face protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### **Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

##### **Body Protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of

the dangerous substance at the specific workplace.

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

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

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Appearance	white powder
Odour	No data available
Odour Threshold	No data available
pH	No data available
Melting point/freezing point	Melting point/range: 122 - 125 °C - lit.
Initial boiling point and boiling range	123-126 °C
Flash point	Not applicable
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative density	No data available
Water solubility	slightly soluble
Partition coefficient: n-octanol/water	log Pow: 1,06 at 25 °C - Bioaccumulation is not expected.
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

### Other safety information

No data available

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## SECTION 10: Stability and reactivity

### Reactivity

No data available

### Chemical stability

Stable under recommended storage conditions.

### **Possibility of hazardous reactions**

No data available

### **Conditions to avoid**

Avoid moisture.

### **Incompatible materials**

Strong oxidizing agents

### **Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Hydrogen bromide gas

Other decomposition products - No data available In the event of fire: see section 5

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## **SECTION 11: Toxicological information**

### **Information on toxicological effects**

#### **Acute toxicity**

LD50 Oral - Rat - male and female - 308 mg/kg (OECD Test Guideline 401)

LD50 Oral - Rat - female - 167 mg/kg (OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - 0,275 mg/l (OECD Test Guideline 403)

LD50 Dermal - Rabbit - male and female - > 2.000 mg/kg (OECD Test Guideline 402)

LD50 Intravenous - Mouse - 10 mg/kg

#### **Skin corrosion/irritation**

Skin - Rabbit

Result: irritating - 4 h (OECD Test Guideline 404)

#### **Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Severe eye irritation (OECD Test Guideline 405)

#### **Respiratory or skin sensitisation**

Buehler Test - Guinea pig Result: positive

(OECD Test Guideline 406)

#### **Germ cell mutagenicity**

No data available

In vitro mammalian cell gene mutation test Chinese hamster ovary cells

Result: negative Ames test Escherichia coli Result: negative Human lymphocytes Result: negative

OECD Test Guideline 474

Mouse - male and female - Bone marrow Result: negative

#### **Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### **Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: AB5956000

Cough, Shortness of breath, Headache, Nausea, Vomiting

**Toxicity**

LD50 oral in mammal (species unspecified): 118mg/kg

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## SECTION 12: Ecological information

### Toxicity

**Toxicity to fish**

flow-through test LC50 - *Cyprinodon variegatus variegatus* (Sheepshead minnow) - 3,4 mg/l - 96 h  
(US-EPA)

**Toxicity to daphnia and other aquatic invertebrates**

EC50 - *Mysidopsis bahia* (opossum shrimp) - 0,72 mg/l - 48 h (US-EPA)

**Toxicity to algae**

static test ErC50 - Algae - 2,3 mg/l - 72 h

(OECD Test Guideline 201)

static test NOEC - Algae - 0,36 mg/l - 72 h (OECD Test Guideline 201)

**Toxicity to bacteria**

Respiration inhibition EC50 - activated sludge - 4,6 mg/l - 3 h (OECD Test Guideline 209)

### Persistence and degradability

Biodegradability Result: 11 % - Not readily biodegradable.

(OECD Test Guideline 301B)

### Bioaccumulative potential

No data available

### Mobility in soil

No data available

### Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### Other adverse effects

Very toxic to aquatic life with long lasting effects. No data available

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## SECTION 13: Disposal considerations

### Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

#### Contaminated packaging

Dispose of as unused product.

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## SECTION 14: Transport information

### UN number

ADR/RID: 2923 IMDG: 2923 IATA: 2923

### UN proper shipping name

ADR/RID: CORROSIVE SOLID, TOXIC, N.O.S. (2,2-Dibromo-2-cyanoacetamide) IMDG: CORROSIVE SOLID, TOXIC, N.O.S. (2,2-Dibromo-2-cyanoacetamide) IATA: Corrosive solid, toxic, n.o.s. (2,2-Dibromo-2-cyanoacetamide)

### Transport hazard class(es)

ADR/RID: 8 (6.1) IMDG: 8 (6.1) IATA: 8 (6.1)

### Packaging group

ADR/RID: II IMDG: II IATA: II

### Environmental hazards

ADR/RID: yes IMDG Marine pollutant: yes IATA: no

### Special precautions for user

No data available

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## SECTION 15: Regulatory information

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

#### Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Not Listed. website: <https://www.mem.gov.cn/>

#### Measures for Environmental Management of New Chemical Substances



European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: <https://echa.europa.eu/>

Vietnam National Chemical Inventory:Listed. website: <https://chemicaldata.gov.vn/>

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: <https://www.epa.gov/>

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: <https://www.mee.gov.cn/>

EC Inventory:Listed.

New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: <https://emb.gov.ph/>

Korea Existing Chemicals List (KECL):Listed. website: <http://ncis.nier.go.kr>

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## SECTION 16: Other information

### Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

### References

**[1]** CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

**[2]** ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

**[3]** ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

**[4]** eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:

[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

**[5]** ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

**[6]** Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

**[7]** HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

**[8]** IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

**[9]** IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

**[10]** Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.