

## Chemical Safety Data Sheet MSDS / SDS

**1-Bromo-3-chloro-5,5-dimethylhydantoin**Revision Date:2023-11-18 Revision Number:1

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

Product name : 1-Bromo-3-chloro-5,5-dimethylhydantoin  
CBnumber : CB3489387  
CAS : 16079-88-2  
EINECS Number : 240-230-0  
Synonyms : 1-BROMO-3-CHLORO-5,5-DIMETHYLHYDANTOIN, 1-bromo-3-chloro-5,5-dimethylimidazolidine-2,4-dione

**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

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**SECTION 2: Hazards identification****Classification of the substance or mixture**

Acute toxicity - Category 4, Oral  
Skin corrosion, Sub-category 1B  
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

**Label elements****Pictogram(s)**

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Signal word : Danger

**Hazard statement(s)**

H272 May intensify fire; oxidizer  
H302 Harmful if swallowed  
H314 Causes severe skin burns and eye damage  
H400 Very toxic to aquatic life

**Precautionary statement(s)**

### Prevention

P264 Wash ... thoroughly after handling.

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

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

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

P273 Avoid release to the environment.

### Response

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P363 Wash contaminated clothing before reuse.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P316 Get emergency medical help immediately.

P321 Specific treatment (see ... on this label).

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

P391 Collect spillage.

### Storage

P405 Store locked up.

### Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

### Other hazards

no data available

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## SECTION 3: Composition/information on ingredients

### Substance

Product name	: 1-Bromo-3-chloro-5,5-dimethylhydantoin
Synonyms	: 1-BROMO-3-CHLORO-5,5-DIMETHYLHYDANTOIN, 1-bromo-3-chloro-5,5-dimethylimidazolidine-2,4-dione
CAS	: 16079-88-2
EC number	: 240-230-0
MF	: C5H6BrClN2O2
MW	: 241.47

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## SECTION 4: First aid measures

### Description of 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.

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

no data available

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

FIRST AID: If in eyes, hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. If on skin or clothing, Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. If inhaled, move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration . Call a poison control center or doctor for further treatment advice. If swallowed, call poison control center, or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person./98% 1-Bromo-3-chloro-5,5-dimethylhydantoin/

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## SECTION 5: Firefighting measures

### **Extinguishing media**

Do not use ammonium phosphate extinguisher near water and /1-bromo-3-chloro-5,5-dimethylhandoin/.

### **Specific Hazards Arising from the Chemical**

no data available

### **Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

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## SECTION 6: Accidental release measures

### **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.

### **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.

## Methods and materials for containment and cleaning up

When handling or dealing with spills, use impact-resistant goggles with side shields, or face shield, body-covering clothes, including impervious rubber or plastic gloves and boots; use a dust respirator if dusting occurs. Sweep up dry spills and dispose of as described for pesticide disposal. If drum contents are contaminated or decomposing, do not reseal container; isolate unsealed drum in the open or in a well-ventilated area; flood with large volumes of water if necessary. 98% 1-Bromo-3-chloro-5,5-dimethylhydantoin

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## SECTION 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

Store in a dark, cool (below 66 deg F (30°C)), dark well-ventilated area, In well closed original containers, away from energy sources, combustible organic materials, oxidizers, strong bases, and moisture.

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## SECTION 8: Exposure controls/personal protection

### Control parameters

#### Occupational Exposure limit values

no data available

#### Biological limit values

no data available

### Exposure controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### Individual protection measures

#### Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

#### Skin protection

Wear fire/flare 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

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## SECTION 9: Physical and chemical properties

## Information on basic physicochemical properties

Physical state	DryPowder,PelletsLargeCrystals
Colour	Free-flowing, white powder
Odour	Faint halogen odor
Melting point/freezing point	159 - 163°C (Decomposes)
Boiling point or initial boiling point and boiling range	232.7°C at 760mmHg
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	94.5°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	pH of 3.5 at 0.15% diluted solution
Kinematic viscosity	no data available
Solubility	In water, 0.15 g/100g water at 20 deg C
Partition coefficient n-octanol/water	log Kow = 0.35
Vapour pressure	Negligible
Density and/or relative density	1.91g/cm3
Relative vapour density	no data available
Particle characteristics	no data available

## SECTION 10: Stability and reactivity

### Reactivity

no data available

### Chemical stability

no data available

### Possibility of hazardous reactions

no data available

### Conditions to avoid

no data available

### Incompatible materials

Strong oxidizer, mix with water only/ Reaction with combustible organic materials, bases, moisture or with oxidizers may generate heat, hazardous gases and, possibly fire or explosion. 98% 1-Bromo-3-chloro-5,5-dimethylhydantoin

### Hazardous decomposition products

When heated to decomposition it emits toxic vapors of /nitrogen oxides, hydrogen bromide, and hydrogen chloride/.

## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 Rat oral 1390 mg/kg
- 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

no data available

### Reproductive toxicity

no data available

### STOT-single exposure

no data available

### STOT-repeated exposure

no data available

### Aspiration hazard

no data available

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## SECTION 12: Ecological information

### Toxicity

Toxicity to fish: LC50; Species: Pimephales promelas (Fathead minnow); Conditions: freshwater, static; Concentration: 14100 ppm for 96 hr (95% confidence interval: 13386-14990 ppm) /97% purity

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water flea) juvenile; Conditions: freshwater, flow through; Concentration: 0.1 ppm for 96 hr; Effect: intoxication, immobilization /96% purity

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

## Persistence and degradability

no data available

## Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for 1-bromo-3-chloro-5,5-dimethylhydantoin(SRC), using a log Kow of 0.35(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).

## Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of 1-bromo-3-chloro-5,5-dimethylhydantoin can be estimated to be 10(SRC). According to a classification scheme(2), this estimated Koc value suggests that 1-bromo-3-chloro-5,5-dimethylhydantoin is expected to have very high mobility in soil(SRC).

## Other adverse effects

no data available

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# SECTION 13: Disposal considerations

## Disposal methods

### 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.

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# SECTION 14: Transport information

## UN Number

ADR/RID: UN3085 (For reference only, please check.)

IMDG: UN3085 (For reference only, please check.)

IATA: UN3085 (For reference only, please check.)

## UN Proper Shipping Name

ADR/RID: OXIDIZING SOLID, CORROSIVE, N.O.S. (For reference only, please check.)

IMDG: OXIDIZING SOLID, CORROSIVE, N.O.S. (For reference only, please check.)

IATA: OXIDIZING SOLID, CORROSIVE, N.O.S. (For reference only, please check.)

## Transport hazard class(es)

ADR/RID: 5.1 (For reference only, please check.)

IMDG: 5.1 (For reference only, please check.)

IATA: 5.1 (For reference only, please check.)

### **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.)

### **Environmental hazards**

ADR/RID: Yes

IMDG: Yes

IATA: Yes

### **Special precautions for user**

no data available

### **Transport in bulk according to IMO instruments**

no data available

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## SECTION 15: Regulatory information

### **Safety, health and environmental regulations specific for the product in question**

#### **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.

#### **PICCS**

Listed.

#### **Vietnam National Chemical Inventory**

Listed.

#### **IECSC**

Listed.

#### **Korea Existing Chemicals List (KECL)**

Listed.

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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

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

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

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

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pagelD=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pagelD=0&request_locale=en)

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

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

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

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

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

### Disclaimer:

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