Material Safety Data Sheet (MSDS)

1. CHEMICAL NAME AND COMPANY IDENTIFICATION

Chemical Name: Bromochloro-5,5-dimethylhydantoin

Synonyms: BCDMH, Bromochloro-5,5-Dimethylimidazolidine-2,4-dione,

Company Identification: Qingdao Kingnod Group Co.,Ltd

ADD: NO.1,XIANGLING ROAD,QINGDAO CITY ,SHANDONG PROVINCE,CHINA

Emergence Telephone: +86-532-83875218 Fax: +86-532-83875218

Product Use: Water treatment. Use as disinfectant and fangicide.

2. HAZARDS INDENTIFICATION

Classification of the substance or mixture:

Oxidizing solids Category3; Skin corrosion/irritation Category1C; Serious eye damage/eye irritation Category1; Skin sensitization Category1; Hazardous to the aquatic environment (acute) Category1.

GHS Label elements, including precautionary statements:

GHS Signal Word: DANGER

GHS Hazard statement(s): H272 May intensify fire; Oxidizer; H302 Harmful if swallowed; H314 Causes severe skin burns and eye damage; H317 May cause an allergic skin reaction; H318 Causes serious eye damages; H332 Harmful if inhaled; H401 Very toxic to aquatic life.

Precautionary statement(s):

Prevention: P210: Keep away from heat/sparks/open flames/hot sources. No smoking; P220: Keep/store away from clothing and other combustible materials; P221: Take any precaution to avoid mixing with combustibles; P260: Do not breathe dust/ fume/gas/mist/vapors/spray; P261: Avoid breathing dust/ fume/gas/mist/vapors/spray; P264: Wash hands thoroughly after handling; P270: Do not eat, drink or smoke when using this product; P271: Use only out doors or in a well-ventilated area; P272: Contaminated work clothing should not be allowed out of the work place; P273: Avoid release to the environment; P280: Wear protective gloves/protective clothing/ eye protection/face protection.

Response: P301+P312: IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell; P301+P330+P331: IF SWALLOWED: Rinse mouth. Do not induce vomiting; P302+P352: IF ON SKIN: Wash with plenty of water; P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower; P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing; P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing; P310: Immediately call a POISON CENTER/doctor; P312: call a POISON CENTER/doctor if you feel unwell; P321: Specific treatment (see first aid instruction on the Chemical Safe Data Sheet); P330: Rinse mouth; P333+P313: If skin irritation or rash occurs: Get medical advice/attention; P362+P364: Take off immediately contaminated clothing and wash it before reuse; P363: Wash contaminated clothing before reuse; P370+P378: In case of fire: Use extinguisher to extinguish; P391: Collect spillage.

Storage: P405: Store locked up.

Disposal: P501: Dispose of contents/container to in accordance with national regulations.

Other hazards which do not result in classification: /

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonym: BCDMH, BromoChloro-5,5-Dimethylimidazolidine-2,4-dione,

Component	Percent	CAS Number
BromoChloro-5,5-Dimethylhydantoin	96%min	32718-18-6
Water	1%max	7732-18-5
Sodium Chloride	3%max	7647-14-5

4.FIRST AID MEASURES

http://kingnod.com

Description of necessary first aid measures

If inhaled: If breathed in, move person into fresh air. Keep respiratory tract unobstructed. If difficulty in breathing, give oxygen. If the patient ingests or inhales this substance, do not perform mouth-to-mouth artificial respiration. If not breathing, immediately perform cardiopulmonary resuscitation. Consult a physician.

In case of skin contact: Take off immediately all contaminated clothing. Wash off with plenty of water. Consult a physician. Wash contaminated clothing before reuse.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed: Rinse mouth. Do not induce vomiting. Get medical attention immediately. Do not feed anything to an unconscious patient.

Most important symptoms and effects, both acute and delayed: /

Indication of immediate medical attention and special treatment needed: /

5. FIRE-FIGHTING MEASURES

Characteristic of Danger: Material is oxidative. Special irritative odor. Decompose in water and bases. React with reducing agents and organic chemicals. Produces poison gas when heated or exposed under light.

Harmful Combustion Products: HBr，HCl，NO_2，CO.

Extinguishing Media: Dry ice and sand. Do not use ABC dry powder extinguisher.

Protective Measures in Fire: Wear protective clothing, Use self-contained breathing apparatus.

Flash Point: Not flammable.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear protective clothing, Use filtered gas mask and chemical safety goggles in the high concentration,

Environmental Precautions: Comply with the environmental protection regulation

Methods and Materials for Containment and Cleaning Up: Clean up as much as the spill. Prevent from entering drains. Carefully sweep up material and place in a compatible container for reclamation. Then spray 1%$FeSO_4$ solution and flush with plenty of water.

7. HANDLING AND STORAGE

Precautions for safe handling: Operators must undergo specialized training and strictly adhere to operating procedures. It is recommended that operators wear dust masks, chemical safety goggles, protective clothing, and rubber gloves. Avoid contact with eyes, skin, and clothing. Maintain smooth ambient air during operation. Keep the container tightly closed when not in use. Keep away from sparks and heat sources, and smoking is strictly prohibited in the workplace. Equip corresponding types and quantities of firefighting equipment and emergency response equipment for leaks.

Conditions for safe storage, including any incompatibilities: Store in a cool, dry, and well-ventilated warehouse. Keep the container sealed and do not get damp. Note that the labels are intact and without omissions. When transporting, it is necessary to load and unload gently to prevent damage to the packaging and containers. It should be stored separately from iron, aluminum, copper, food, etc., and mixed storage and transportation should be avoided. Avoid contact with other substances that can easily cause product decomposition. The storage area should be equipped with emergency response equipment for leaks and suitable storage materials.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters: /

Appropriate engineering controls: Closed operation, local ventilation. Provide eye washers and emergency showers near the workplace.

Personal protective equipment:

Eye/face protection: Wear chemical safety goggles and protective masks. Hand protection: Wear chemical protective gloves.

Skin and body protection: Wear chemical protective gloves, eg. PVC. Wear safety footwear or safety gumboots, eg. Rubber. Impervious clothing, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: White or off-white solid with faint halogen smell.

Melting point/freezing point: 159-163°C

https://kingnod.com

Boiling point or initial boiling and boiling range: 232.7°C at 760mmHg
Flammability: Non flammable
Lower and upper explosion limit/flammable limit: Not applicable
Flash point: Not applicable
Auto-ignition temperature: Not applicable
Decomposition temperature: No data
pH: 1% aqueous solution pH 3.5-4.5
Kinematic viscosity: Not applicable
Solubility: 0.15g/100ml(25°C)
Partition coefficient n-octanol/water (log value): Not applicable
Vapor pressure: Not applicable
Density and/or relative density: 1.4- 2.0 g/cm^3
Relative vapor density: Not applicable
Particle characteristics No data

10. STABILITY AND REACTIVITY

Reactivity: Contact with incompatible substances can lead to decomposition or other chemical reactions.

Chemical stability: Stable under normal temperatures and pressures.

Possibility of hazardous reactions: Hazardous polymerization will not occur.

Conditions to avoid: Strong light, Hot and humid.

Incompatible materials: Iron, aluminum, copper, Acids，Bases，Oxidizers，Reducing agents，Organic chemicals.

Hazardous Polymerization: Not occur.

Hazardous decomposition products: Under normal storage and usage conditions, no hazardous decomposition products will be generated. Thermal decomposition forms HBr，HCl，NO_2，CO，CO_2. Decomposition in water produces HBr，HCl，NH_3，CO_2.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: Acute toxicity. LD50. Oral Rat. 578 mg/kg; Acute toxicity LD50. Skin Rat. >2000 mg/kg. Acute toxicity LD50.Inhalation Rat LC50=0.53mg/L of air.

Subsidiary and Chronic Toxicity: None.

Irritability: Causes severe skin burns and eye damage. Causes serous eye irritation.

Sensitization: Prolonged or repeated skin contact with solid BCDMH resulted in minor reddening of the skin and superficial necrosis with the development of excessive exfoliation. Contact with dilute solutions of 0.1% or less was not irritating to the skin. Eye contacts with BCDMH powder result in persistent severe conjunctiva irritation and slow development of corneal damage in rabbits. Washing the eye promptly resulted in a significant reduction of adverse effects. Dilute solutions of 0.1% or less were non-irritating to the eyes.

Mutagenicity: BCDMH was tested for potential mutagenic effects using Salmonella and Saccharomyces. All the results of the tests were negative.

Deformity: No deformity to rat sperm.

Carcinogenicity: Not found.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: Very toxic to aquatic life. Fish Toxicity: 1mg/L ＜ LC_{50} ≤10mg/L
Persistence and degradability: No data available.
Bioaccumulative potential: No data available.
Mobility in soil: No data available.
Other adverse effects: No data available.

13. DISPOSAL

Properties of Waste: Hazardous waste.

Waste Disposal Methods: Control burning, absorb waste gas by limewater. In accordance with the local environmental protection department under the disposal of the product containers, waste packaging and residues. Consult a professional waste disposal company proposal. Decontaminate empty containers. Waste shipments must be securely packed, properly labeled, and documented.

14. TRANSPORT INFORMATION

https://kingmod.com

Shipping Name: Oxidizing solid, Corrosive, N.O.S

UN No.: 3085

Classification of Dangerousness: 5.1 + 8

Packing Label: Oxidizing solid, Corrosive

Marine Pollutant: Yes

Packing Group: III

Packing Methods: Sealed in plastic bag and then packing in large ones..

Transportation Note: Prevent from high temperature, high moisture and straight sunlight.

Special precautions for user: Please select appropriate transportation means and corresponding transportation and storage conditions according to the nature of chemicals. The means of transport shall be equipped with fire-fighting materials of corresponding varieties and quantities and emergency treatment equipment for leakage.

15. REGULATORY INFORMATION

Regulations: All users must comply with the regulations or standards about safety production, use, storage, transportation, loading and unloading of hazardous chemical in local country.

1/ Regulations on the Safety Management of Dangerous Chemicals (Revised version of 2013)
2/ Regulations on the Safe Use of Chemicals in the Workplace ([1996] Labor Department issued No.423)
3/ General rule for classification and hazard communication of chemicals(GB13690-2009)
4/ List of dangerous goods (GB12268-2012)
5/ Classification and code of dangerous goods (GB 6944-2012)
6/ The principle of classification of transport packaging groups of dangerous goods (GB/T15098-2008)
7/ Occupational exposure limits for hazardous agents in the workplace Chemically hazardous agents (GBZ 2.1 -2019)
8/ Safety data sheet for chemical products-Content and order of sections (GB/T 16483-2008)
9/ Rules for classification and labelling of chemicals - Part 15:Oxidizing solids(GB30000.15-2013)
10/ Rules for classification and labelling of chemicals - Part 19: Skin corrosion / irritation(GB30000.19-2013)
11/ Rules for classification and labelling of chemicals - Part 20: Serious eye damage/eye irritation (GB 30000.20-2013)
12/ Rules for classification and labelling of chemicals - Part 21:Respiratory or skin sensitization (GB30000.21-2013)
13/ Rules for classification and labelling of chemicals - Part 28: Hazardous to the aquatic environment (GB30000.28-2013)

16. OTHER INFORMATION

References:

1/ Globally Harmonized System of Classification and Labelling of Chemicals (GHS) (Ninth revised edition)
2/ Recommendations on the Transport of Dangerous Goods, Model Regulations (TDG) (Twenty-second revised edition)

Other information: The SDS is prepared based on the existing knowledge of our center. Although it describes some hazards, we do not guarantee that these are the only hazards. The user shall, according to the actual situation and referring to the above data, formulate the safety operation procedures by himself, and abide by the current laws and regulations. The relevant data in this safety technical manual is only for safety work reference and does not represent the product specification.

https://kingsod.com