Pony Testing International Group

Report No.：I03144025616D

SDS Report

Sample Description 1-bromo-3-chloro-5,5-dimethylhydantoin

Applicant Longkou Keda Chemical Co., Ltd.

Pony Testing International Group

www.ponytest.com

Safety Data Sheet

1-bromo-3-chloro-5,5-dimethylhydantoin

Section 1 - Identification of the substance/preparation and of the company/undertaking

Product Identifier

Product name : 1-bromo-3-chloro-5,5-dimethylhydantoin

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

Identified uses : Water treatment biocide

Details of the supplier of the safety data sheet

Applicant : Longkou Keda Chemical Co., Ltd.

Address : 2001 longgang road longkou city shandong province China

Post code : 265700

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FAX : +86-535-8830969

E-mail : market@kadachem.com

Emergency telephone number

Emergency Phone # 1-800-535-5053

Section 2 - Hazards Identification

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Oxidizing solids(Category 2) Skin corrosion (Category 1B)

Skin sensitization (Category 1) Acute toxicity, Oral (Category 4)

Acute aquatic toxicity (Category 1)

Classification according to EU Directives 67/548/EEC or 1999/45/EC

O;R8 C; R34 Xn; R22 R31 R43 N, R50

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Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram

Signal word Danger

Hazard statement(s)

H272 May intensify fire; oxidiser.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H400 Very toxic to aquatic life.

EUH031 Contact with acids liberates toxic gas.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P220 Keep/Store away from clothing/ combustible materials.

P273 Avoid release to the environment.

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

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

P302+352 IF ON SKIN: Wash with soap and water.

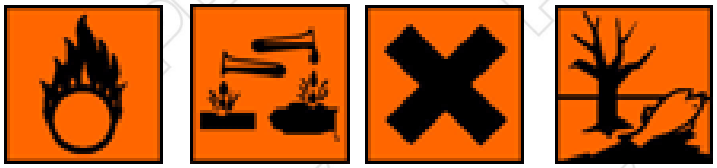
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

Supplemental Hazard Statements none

According to European Directive 67/548/EEC as amended.

Hazard symbol(s)



R-phrase(s)

R8 Contact with combustible material may cause fire.

R22 Harmful if swallowed.

R31 Contact with acids liberates toxic gas.

R34 Causes burns.

R43 May cause sensitization by skin contact.

R50 Very toxic to aquatic organisms.

S-phrase(s)

S1/2 Keep locked up and out of the reach of children.

S17 Keep away from combustible material.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S28 After contact with skin, wash immediately with plenty of water.

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S60 This material and its container must be disposed of as hazardous waste.

S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.

Other hazards No information available

Section 3 – Composition/Information on Ingredient

Chemical composition

Component	CAS No.	Formula	Composition	EC No.	Classification	GHSCLAS
1-bromo-3-chloro-dimethylhydantoin	16079-88-2	$C_5H_6BrClN_2O_2$	≥ 98%	251-171-5	O, R8 C, R34 Xn, R22 R31 R43 N, R50	Ox. Sol. 2 Acute Tox. 4* Skin Corr. 1B Skin Sens. 1 Aquatic Acute 1 H272 H302 H314 H317 H400 EUH031

For the full text of H-Statements and R-Phrases mentioned in this Section, see Section 16.

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Section 4-First Aid Measures

Description of first aid measures

Eye Contact: Check for and remove any contact lenses. Flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Get medical aid immediately.

Skin Contact: Immediately wash skin with soap and copious amounts of water while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Wash out mouth with water. Get medical aid. Loosen tight clothing such as a collar, tie, belt or waistband. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

Inhalation: Remove from exposure and move to fresh air immediately. Loosen tight clothing such as a collar, tie, belt or waistband. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if irritation develops or persists. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Notes to Physician: Treat symptomatically.

Section 5 – Fire-Fighting Measures

Extinguishing media

Suitable Extinguishing Media:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Use water spray to cool unopened containers.

Special hazards arising from the substance or mixture:

Contact with other material may cause fire. May accelerate combustion. Forms explosive mixtures with air on intense heating. May emits toxic fumes under fire conditions. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion. Keep product and empty container away from heat and sources of ignition.

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Advice for firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

If packages rupture. Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep substance wet using water spray. Avoid dust formation. Avoid breathing dust, vapor, mist, or gas. Shut off source of the leak only if it is easy to do so. Do not get water inside containers.

Environmental precautions

Take precautions to ensure product does not contaminate the ground or enter the drainage system, surface water, sanitary sewer or ground water system.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

Section 7 - Handling and Storage

Precautions for safe handling

In accordance with good industrial practice, handle with care and avoid unnecessary personal contact. Use with adequate ventilation. Avoid breathing dust, vapor, mist, or gas. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Avoid prolonged or repeated exposure. Avoid physical damage to the container. Empty containers retain product residue, (dust and/or solids), and can be dangerous. Keep away from open flames, hot surfaces and sources of ignition. Keep away from heat and direct sunlight. Use only non-sparking tools. Use explosion-proof equipment. Ground

and bond containers when transferring material. Take precautionary measures against static discharges. No smoking, eating and drinking water at workplace. Before break and at the end of work hands should be thoroughly washed. Do not allow water to get into the container. Keep away from incompatibles such as reducing agents, combustible materials, organic materials, acids.

Conditions for safe storage, including any incompatibilities

Store in a tightly closed container. Store in a cool, dry, well-ventilated away from incompatible substances and foodstuff containers. Keep away from heat, sparks and open flames. Keep away from sources of ignition. Keep away from direct sunlight. Keep away from moisture and water. Keep away from combustible materials and wooden floors. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep out of the reach of children.

Specific end uses

No data available

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure limits: No data available

Engineering Controls

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ ventilating/lighting/equipment Ensure that eyewash stations and safety showers are close to the workstation location

Personal Protective Equipment

Eyes Protection: Wear chemical splash goggles.

Skin Protection: Wear appropriate protective gloves.

Body Protection: Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respirators Protection: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Other Protection: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. To maintain good health habits.

Section 9 - Physical and Chemical Properties

Appearance	Form: Powder Colour: White or off-white
Odour	Slightly halogen odor
Odour Threshold	No data available
pH	No data available
Melting point/freezing point	156-165℃
Initial boiling point and boiling range	No data available
Flash point	142℃
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	No data available
Autoignition temperature	No data available
Decomposition temperature	>160℃
Viscosity	No data available

Section 10 - Stability and Reactivity

Reactivity No data available

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions

Hazardous Polymerization Will not occur.

Hazardous Reactions None under normal processing.

Conditions to avoid Incompatible materials. Excess heat. Direct sunlight, dust generation, ignition sources, exposure to air, combustible materials, exposure to moist air or water.

Incompatible materials Strong oxidizing agents, Strong acids, Strong bases, Alcohols, Strong reducing agents, Organic materials.

Hazardous decomposition products May produce irritating and toxic fumes and gases. Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO_2). Hydrogen bromide (HBr). Hydrogen chloride (HCl). Bromine. Chlorine.

Section 11 - Toxicological Information

Information on toxicological effects

Acute toxicity:

CAS#: 16079-88-2

Oral, rat: LD50 = 485 mg/kg;

Skin, rabbit: LD50 > 2000 mg/kg;

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

1-bromo-3-chloro-5,5-dimethylhydantoin 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

Potential Health Effects

Eye: Corrosive to eyes. Eye contact can result in corneal damage or blindness.

Skin: Hazardous in case of skin contact (sensitizer). The amount of tissue damage depends upon length of contact. Skin contact can produce inflammation and blistering. Prolonged exposure may result in skin burns and ulcerations.

Ingestion: Harmful if swallowed. Causes chemical burns to the mouth, throat, oesophagus and gastrointestinal tract. Risk of perforation in the oesophagus and stomach. Swallowing concentrated chemical may cause severe internal injury.

Inhalation: Inhalation of dust will produce irritation to gastrointestinal or respiratory tract, characterized by burning, sneezing, coughing and wheezing. Overexposure by inhalation may cause respiratory irritation. May be fatal if inhaled.

Signs and Symptoms of Exposure

Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction or dermatitis. Repeated inhalation of dust can produce varying degrees of respiratory irritation or lung damage. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

RTECS#: CAS#16079-88-2: Unlisted

Section 12 - Ecological Information

Toxicity

CAS#16079-88-2:Fish: Oncorhynchus myki ss (rainbow trout): LC50 = 0.65 mg/l/96 h;

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Fish: Lepomis macrochirus (Bluegill sunfish): LC50 = 1.17 mg/l/96 h;

Daphnia: Daphnia magna (Water flea): EC50 = 0.87 mg/l/48 h;

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

No data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

Section 13 - Disposal Considerations

Waste treatment methods

Waste from Residues / Unused Products: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

Contaminated packaging: Contaminated packaging material should be treated equivalent to residual chemical. Clean packaging material should be subjected to waste management schemes (recovery recycling, reuse) according to local legislation.

Section 14 - Transport Information

	IATA	IMDG	RID/ADR	DOT
Proper shipping name	Oxidizing solid, corrosive, n.o.s. 1-bromo-3-chloro-5,5-dimethylhydantoin	Oxidizing solid, corrosive, n.o.s. 1-bromo-3-chloro-5,5-dimethylhydantoin	Oxidizing solid, corrosive, n.o.s. 1-bromo-3-chloro-5,5-dimethylhydantoin	Oxidizing solid, corrosive, n.o.s. 1-bromo-3-chloro-5,5-dimethylhydantoin

	IATA	IMDG	RID/ADR	DOT
Hazard class	5.1(8)	5.1(8)	5.1(8)	5.1(8)
Un number	UN3085	UN3085	UN3085	UN3085
Packing group	III	III	III	III

Section 15 - Regulatory Information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

No data available

Canada

CAS#16079-88-2 is not listed on Canada's DSL and NDSL List.

US Federal

Toxic Substance Control Act (TSCA)

CAS#16079-88-2 is not listed on the TSCA Inventory

Section 16 - Additional Information

SDS Creation Date: Mar 21, 2014

The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Text of H-code(s) and R-phrase(s) mentioned in Section 3

Ox. Sol. 2: Oxidizing solids(Category 2)

Skin Corr. 1B: Skin corrosion (Category 1B)

Skin Sens. 1: Skin sensitization (Category 1)

Acute Tox. 4*: Acute toxicity, Oral (Category 4)

Aquatic Acute 1: Acute aquatic toxicity (Category 1)

H272 May intensify fire; oxidiser.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H400 Very toxic to aquatic life.

EUH031 Contact with acids liberates toxic gas.

R8 Contact with combustible material may cause fire.

R22 Harmful if swallowed.

R31 Contact with acids liberates toxic gas.

R34 Causes burns.

R43 May cause sensitization by skin contact.

R50 Very toxic to aquatic organisms.

Other Information:

ACGIH:（American Conference of Governmental Industrial Hygienists）; CAS:（Chemical Abstracts Service）; DSL:（the Domestic Substances List of Canada）; EC:（European Commission）; IARC:（International Agency for Research on Cancer）;IATA:（International Air Transport Association）; IMDG:（International Maritime Dangerous Goods）;ADR: (European Agreement Concerning the International Carriage of Dangerous Goods by Road);RID: (Regulations Concerning the International Carriage of Dangerous Goods by Rail); LD50:（Lethal dose, 50 percent kill）; NDSL:（the Non-domestic Substances List of Canada）; NIOSH:（US National Institute for Occupational Safety and Health）;NTP:（US National Toxicology Program）;OSHA:（US Occupational Safety and Health）; PEL: (Permissible Exposure Level); REL:（Recommended Exposure Limit）; RTECS: （Registry of Toxic Effects of Chemical Substances）; STEL:（Short Term Exposure Limit）;TDG:（Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations）; TSCA:（Toxic Substances Control Act of USA）TWA:（Time Weighted Average）;TLV: （Threshold Limit Value）