



SAFETY DATA SHEET BROMICIDE GRANULES

1. IDENTIFICATION

Product Name	BROMICIDE GRANULES
Chemical Name	1-Bromo-3-chloro-5, 5-dimethylhydantoin
Product No.	100398, 100438, 100440, 100805, 100424, 100425
Identification No.	1479
Identified uses	Biocides for water treatment.
Supplier	BWA Water Additives US LLC 1979 Lakeside Parkway Suite 925, Tucker, GA30084 USA T: +1 800 600 4523 T: +1 678 802 3050 E: msds@wateradditives.com
Emergency Telephone	CHEMTREC Phone: 1-800-424-9300

2. HAZARD(S) IDENTIFICATION

EMERGENCY OVERVIEW

EPA REGISTRATION No: 83451-3 EPA SIGNAL WORD: DANGER. EPA FIFRA Labelling information in Section 15 (PRN 2012-1)

Appearance	Granular
Color	White / off-white.
Odor	Slight odor. Halogen
GHS Pictogram	



Signal Word Danger

Hazard Statements

H272	May intensify fire; oxidizer.
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.

Precautionary Statements

P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+330+331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+361+353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+351+338	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 or doctor/physician.
P501	Dispose of contents/container in accordance with national regulations.

Contains

1-Bromo-3-chloro-5,5-dimethylhydantoin

BROMICIDE GRANULES**GHS Classification**

Physical and Chemical Hazards	Ox. Sol. 3 - H272
Human health	Acute Tox. 4 - H302; Skin Corr. 1B - H314; Skin Sens. 1 - H317
Environment	Aquatic Acute 1 - H400

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM - WHMIS**WHMIS Label**

Oxidizing Material.



Corrosive Material.

Controlled Product Classification

Canadian WHMIS Classification C E

Inhalation

May cause irritation to the respiratory system.

Ingestion

Harmful if swallowed.

Skin Contact

Causes burns. May cause sensitization by skin contact.

Eye Contact

Causes burns.

Health Warnings

This substance is corrosive. Contact with acids liberates toxic gas.

Route Of Entry

Skin and/or eye contact. Ingestion. Inhalation.

Other Health Effects

This substance has no evidence of carcinogenic properties.

3. COMPOSITION/INFORMATION ON INGREDIENTS

1-Bromo-3-chloro-5,5-dimethylhydantoin	60-100%
CAS No.: 16079-88-2	EC No.: 240-230-0
GHS Classification Ox. Sol. 3 - H272; Acute Tox. 4 - H302; Skin Corr. 1B - H314; Skin Sens. 1 - H317; Aquatic Acute 1 - H400	

Composition Comments

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

4. FIRST-AID MEASURES**Description of first aid measures****Inhalation**

Provide fresh air, warmth and rest, preferably in a comfortable upright sitting position. Get medical attention.

Ingestion

DO NOT INDUCE VOMITING! NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Rinse mouth thoroughly. Get medical attention immediately!

Skin Contact

Remove contaminated clothing. Rinse the skin immediately with lots of water. Get medical attention immediately!

Eye Contact

Remove victim immediately from source of exposure. Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention immediately

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

Inhalation of dust may cause irritation of the respiratory tract.

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Ingestion

May cause stomach pain or vomiting. May cause chemical burns in mouth and throat. Due to the physical nature of this material it is unlikely that swallowing will occur.

Skin Contact

Chemical burns. Burning pain and severe corrosive skin damage.

Eye Contact

Extreme irritation of eyes and mucous membranes, including burning and tearing.

Indication of any immediate medical attention and special treatment needed

Notes To The Physician

If lavage is performed suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision of whether to induce vomiting or not should be made by a physician. Chemical eye burns may require extended irrigation. Obtain prompt consultation preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

Auto Ignition Temperature (°C)

Not available.

Flammability Limit - Lower(%)

Not applicable.

Flammability Limit - Upper(%)

Not applicable.

Flash point (°C)

Not available.

Extinguishing Media

Use: Water spray, fog or mist. Alcohol resistant foam. DO NOT use CO2 or dry chemicals.

Unsuitable extinguishing media

Carbon dioxide (CO2). Dry chemicals.

Unusual Fire & Explosion Hazards

Fire causes formation of toxic gases.

Specific Hazards

Toxic gases/vapors/fumes of: Bromine. Chlorine. Oxides of: Carbon. Nitrogen.

Special Fire Fighting Procedures

Move container from fire area if it can be done without risk. Keep run-off water out of sewers and water sources. Dike for water control.

Protective Equipment For Fire-Fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Follow precautions for safe handling described in this material safety data sheet. For personal protection, see section 8.

Environmental Precautions

Avoid release to the environment. To prevent release, place container with damaged side up.

Spill Clean Up Methods

Provide ventilation and confine spill. Do not allow runoff to sewer. Collect and reclaim or dispose in sealed containers in licensed waste. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Wash thoroughly after dealing with a spillage. Avoid generation and spreading of dust. Avoid contact with water.

Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

7. HANDLING AND STORAGE

Handling

Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Do not use in confined spaces without adequate ventilation and/or respirator. Avoid spilling, skin and eye contact. Avoid acids, moisture, and combustible materials. Avoid handling which leads to dust formation.

Storage

Store in tightly closed original container in a dry, cool and well-ventilated place. Keep containers tightly closed. Protect from light, including direct sunrays. Keep away from heat, sparks and open flame.

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Storage Class

Oxidizer storage. NFPA STORAGE CLASSIFICATION:NFPA Oxidiser Class 2.

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredient Comments

No exposure limits noted for ingredient(s).

Protective Equipment



Process Conditions

Use engineering controls to reduce air contamination to permissible exposure level. Provide eyewash station.

Engineering Measures

All handling to take place in well-ventilated area.

Respiratory Equipment

Use specified dust masks.

Hand Protection

Selection of a suitable glove depends on work conditions and whether the product is present on its own or in combination with other substances. Use protective gloves made of: Neoprene, nitrile, polyethylene or PVC. Gloves should be replaced immediately if signs of degradation are observed.

Eye Protection

Use approved safety goggles or face shield.

Other Protection

Wear appropriate clothing to prevent any possibility of skin contact.

Wear dust masks in dusty areas.

Hygiene Measures

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Isolate contaminated clothing and wash before reuse.

Skin Protection

Wear apron or protective clothing in case of contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Granular
Color	White / off-white.
Odor	Slight odor. Halogen
Solubility	Slightly soluble in water.
Initial boiling point and boiling range (°C)	Not available.
Melting point (°C)	145 - 160
Relative density	Not applicable.
Bulk Density	0.9 kg/l
Vapor density (air=1)	Not available.
Vapor pressure	0.0038 Pa 25°C
Evaporation rate	Not available.
Evaporation Factor	Not available.
pH-Value, Conc. Solution	Not available.
pH-Value, Diluted Solution	3.5 @ 0.15 %

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Viscosity

Not available.

Solubility Value (G/100G 0.15

H₂O@20°C)

Decomposition temperature 160°C

(°C)

Odour Threshold, Lower

Not available.

Odour Threshold, Upper

Not available.

Flash point (°C)

Not available.

Auto Ignition Temperature (°C)

Not available.

Flammability Limit - Lower(%)

Not applicable.

Flammability Limit - Upper(%)

Not applicable.

Partition Coefficient log Pow

(N-Octanol/Water) 0.35

Explosive properties

Scientifically unjustified.

This material is oxidising keep away from fire/heat/sources of ignition.

Not available.

10. STABILITY AND REACTIVITY

Reactivity

This material has oxidising properties.

Stability

Stable under normal temperature conditions. Avoid Moisture.

Hazardous Polymerisation

Will not polymerise.

Conditions To Avoid

Generates toxic gas in contact with acid. Avoid heat, flames and other sources of ignition. Avoid excessive heat for prolonged periods of time.

Materials To Avoid

Strong acids. Strong alkalis. Strong reducing agents.

Hazardous Decomposition Products

Toxic gases/vapors/fumes of: Hydrogen bromide (HBr). Bromine. Hydrogen chloride (HCl). Chlorine. Oxides of: Carbon. Nitrogen.

11. TOXICOLOGICAL INFORMATION

Other Health Effects

This substance has no evidence of carcinogenic properties.

Acute toxicity:

Acute Toxicity (Oral LD50)

578 mg/kg Rat

Acute Toxicity (Dermal LD50)

> 2000 mg/kg Rabbit

Germ cell mutagenicity:

Genotoxicity - In Vitro

Ames Test

Negative.

12. ECOLOGICAL INFORMATION

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Ecotoxicity

The product contains a substance which is very toxic to aquatic organisms.

Acute Toxicity - Fish

LC50 96 hours 0.87 mg/l Onchorhynchus mykiss (Rainbow trout)

Acute Toxicity - Aquatic Invertebrates

EC50 48 hours 0.46 mg/l Daphnia magna

Degradability

DMH is readily biodegradable in a CO2 Evolution study and passes the 10-day window criteria. DMH has also been shown to be rapidly degraded in a water/sediment system.

Chemical Oxygen Demand

1.005 g O2/g substance

Bioaccumulative potential

Low bioaccumulation potential

Partition coefficient

log Pow 0.35

Mobility:

Information not available.

Results of PBT and vPvB assessment

An assessment of the substance's properties indicates it is neither a PBT or vPvB.

Acute Toxicity. Lc50 96 640 American Oyster

Hours, Mg/L

13. DISPOSAL CONSIDERATIONS

Waste Management

When handling waste, consideration should be made to the safety precautions applying to handling of the product.

Disposal Methods

Dispose of waste and residues in accordance with local authority requirements.

Absorb in vermiculite or dry sand and dispose of at a licenced hazardous waste collection point.

Liquid material should be incinerated. Material absorbed onto sand or earth should be disposed of as solid waste in accordance with local regulations. Empty packaging may contain product residues and due consideration should be given prior to disposal.

14. TRANSPORT INFORMATION

UN No. (DOT/TDG)	1479
UN No. (IMDG)	1479
UN No. (ICAO)	1479
DOT Proper Shipping Name	OXIDIZING SOLID, N.O.S., (contains bromo-chloro-dimethylhydantoin) 5.1, PGIII, MARINE POLLUTANT
TDG Proper Shipping Name	OXIDIZING SOLID, N.O.S., (contains bromo-chloro-dimethylhydantoin) 5.1, PGIII, MARINE POLLUTANT
DOT Hazard Class	5.1
DOT Hazard Label	5.1 Oxidizer
TDG Class	5.1
IMDG Class	5.1
ICAO Class	5.1
Transport Labels	



DOT Pack Group	III
IMDG Pack Group	III

BROMICIDE GRANULES

Air Pack Group III
Environmentally Hazardous Substance/Marine Pollutant



EMS F-A, S-Q

Markings

MARINE POLLUTANT

Packaging Instructions P002, LP02

Transport in Bulk according to Annex II of MARPOL 73/78 and the IBC Code Notes

Not applicable.

Classification Code (Adr) O2

15. REGULATORY INFORMATION**Regulatory Status (US)**

SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372. PROPOSITION 65: This product does not contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity and for which warnings are now required. TSCA: The ingredients of this product are on the TSCA Inventory. TSCA Export Notification Section 12b. EPA REGISTRATION NUMBER: 83451-3

Regulatory References

29 CFR 1910.1010 Federal Regulations (OSHA Standard).

US Federal Regulations**SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities**

None of the ingredients are listed.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

None of the ingredients are listed.

SARA 313 Emission Reporting

None of the ingredients are listed.

CAA Accidental Release Prevention

None of the ingredients are listed.

US State Regulations**California Proposition 65 Carcinogens and Reproductive Toxins**

None of the ingredients are listed.

Massachusetts "Right To Know" List

None of the ingredients are listed.

Rhode Island "Right To Know" List

None of the ingredients are listed.

Minnesota "Right To Know" List

None of the ingredients are listed.

New Jersey "Right To Know" List

None of the ingredients are listed.

Pennsylvania "Right To Know" List

None of the ingredients are listed.

Fifra Information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER.

Corrosive.

Causes irreversible eye damage and skin burns.

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Harmful if swallowed.

Irritating to nose and throat.

Do not get in eyes, on skin, or on clothing.

International Inventories

EU - EINECS/ELINCS

All ingredients are listed or exempt.

Canada – DSL/NDSL

All ingredients are listed or exempt.

US - TSCA

The following ingredients are listed.

1-Bromo-3-chloro-5, 5-dimethylhydantoin

US – TSCA 12(b) Export Notification

The following ingredients are listed.

1-Bromo-3-chloro-5, 5-dimethylhydantoin

Australia - AICS

The following ingredients are listed.

1-Bromo-3-chloro-5, 5-dimethylhydantoin

Japan – MITI

The following ingredients are listed.

1-Bromo-3-chloro-5, 5-dimethylhydantoin

Korea - KECI

The following ingredients are listed.

1-Bromo-3-chloro-5, 5-dimethylhydantoin

China - IECSC

The following ingredients are listed.

1-Bromo-3-chloro-5, 5-dimethylhydantoin

Phillippines – PICCS

The following ingredients are listed.

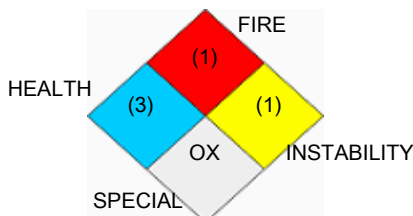
1-Bromo-3-chloro-5, 5-dimethylhydantoin

16. OTHER INFORMATION

HAZARDOUS MATERIAL INFORMATION SYSTEM (HMIS)

HEALTH		3
FLAMMABILITY		1
PHYSICAL		1
PERSONAL PROTECTION		C

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)



General Information

For advice on chemical emergencies, spillages, fires or first aid in relation to this product please contact the relevant emergency number below :

EU/English Speakers - +44 (0) 1235 239 670 (NCEC)

Arabic Speakers - +44 (0) 1235 239 671

Asia/Pacific countries - +65 3158 1074

Within Mainland China: +86 532 8388 9090 (NRCC).

To/From China: +86 10 5100 3039 (NCEC)

Revision Comments

Conversion to GHS (HCS 2012 / WHMIS 2015)

Issued By

BWA Water Additives Regulatory Group, +44(0)1618646699

Revision Date

4th March, 2015

BROMICIDE GRANULES

Revision 8
Sds No. 10805

Disclaimer

For safety reasons it is IMPERATIVE that customers:-

1. Ensure that all those within their control who use the products are supplied with all relevant information contained within the Safety Data Sheet and Technical Bulletin concerning the applications for which the product is designed and any instructions and warnings contained therein.
2. Consult BWA Water Additives before using or supplying the product for any other applications. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.