

SAFETY DATA SHEET

according to US Regulation 29 CFR 1910.1200 and the Canadian HPA

Dantoin™ BCDMH tablets

Version 1.5

Revision Date 2021.11.12

Print Date 2023.05.03

SECTION 1. IDENTIFICATION

Product name : Dantoin™ BCDMH tablets

Manufacturer or supplier's details

Company : Arxada, LLC
412 Mount Kemble Avenue, Suite 200S
Morristown, NJ 07960
USA

Telephone : 1-201-316-9200
E-mail address : sds-info@arxada.com

Emergency telephone number : For incidents only (spill, leak, fire, exposure, or accident), call
CHEMTREC at
1-800-424-9300 (inside North America) [CCN 864796]
1-703-741-5970 (outside North America) [CCN 864796]
+41 61 313 94 94 (24h)

Recommended use of the chemical and restrictions on use

Recommended use : Biocides

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4
Skin corrosion : Category 1B
Serious eye damage : Category 1
Skin sensitisation : Category 1
Short-term (acute) aquatic hazard : Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : 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.

Dantoin™ BCDMH tablets

Precautionary statements : **Prevention:**
P260 Do not breathe dust or mist.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/container in accordance with local regulation.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture :
Substance name : Substance
CAS-No. : 2,4-Imidazolidinedione, bromochloro-5,5-dimethyl-
32718-18-6

Hazardous components

Chemical name / Synonyms	CAS-No.	Concentration (% w/w)
1-Bromo-3-chloro-5,5-dimethylimidazolidine-2,4-dione	16079-88-2	90 - 100

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
If unconscious, place in recovery position and seek medical

Dantoin™ BCDMH tablets

	advice. If breathing is irregular or stopped, administer artificial respiration. Call a physician or poison control centre immediately. Keep respiratory tract clear.
In case of skin contact	: After contact with skin, wash immediately with plenty of soap and water. Take off contaminated clothing and shoes immediately. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. Take victim immediately to hospital.
In case of eye contact	: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. Continue rinsing eyes during transport to hospital. Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
If swallowed	: Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Take victim immediately to hospital.
Most important symptoms and effects, both acute and delayed	: No information available.
Notes to physician	: Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Water spray Alcohol-resistant foam Dry chemical
Specific hazards during firefighting	: Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Heating or fire can release toxic gas. Do not allow run-off from fire fighting to enter drains or water courses.
Further information	: Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Special protective equipment for firefighters	: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective	: Use personal protective equipment.
----------------------------------	--------------------------------------

Dantoin™ BCDMH tablets

equipment and emergency procedures	Avoid dust formation. In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit.
Environmental precautions	: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.
Methods and materials for containment and cleaning up	: Pick up and arrange disposal without creating dust. Shovel into suitable container for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	: Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed. Take precautionary measures against static discharges.
Advice on safe handling	: Avoid formation of respirable particles. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	: Keep container tightly closed. To maintain product quality, do not store in heat or direct sunlight. Keep in a dry, cool and well-ventilated place.
Further information on storage conditions	: Incompatible with oxidizing agents.
Technical measures/Precautions	: Incompatible with oxidizing agents.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection	: In the case of dust or aerosol formation use respirator with an approved filter. Half mask with a particle filter P2 (EN 143)
Hand protection	
Material	: Nitrile rubber
Remarks	: Wear protective gloves. Break through time : > 480 min

Dantoin™ BCDMH tablets

Eye protection	: Safety glasses with side-shields conforming to EN166 Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	: Choose body protection according to the amount and concentration of the dangerous substance at the work place. Dust impervious protective suit
Hygiene measures	: Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: tablet
Colour	: white
Odour	: odourless
Odour Threshold	: no data available
pH	: no data available
Melting point/range	: 313 - 324 °F / 156 - 162 °C Decomposition: yes Method: OECD Test Guideline 102 GLP: yes
Decomposition temperature	329 °F / 165 °C
Boiling point/boiling range	: Decomposition: yes Method: OECD Test Guideline 103 GLP: yes Not applicable
Flash point	: 287 °F / 142 °C
Evaporation rate	: no data available
Flammability (solid, gas)	: no data available
Flammability (liquids)	: no data available
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: 3.8 mPa (77 °F / 25 °C) Method: OECD Test Guideline 104 GLP: yes
Relative vapour density	: Not applicable
Relative density	: 1.87 (73 °F / 23 °C) Method: OECD Test Guideline 109 GLP: yes

Dantoin™ BCDMH tablets

Water solubility	: hydrolyses Method: OECD Test Guideline 105 GLP: yes
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: not determined
Decomposition temperature	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: Not applicable
Explosive properties	: No hazards to be specially mentioned.
Oxidizing properties	: The substance or mixture is not classified as oxidizing. GLP: yes
Molecular weight	: 482.94 g/mol

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Stable under normal conditions.
Conditions to avoid	: Heat
Incompatible materials	: Bases Strong acids and oxidizing agents Combustible material
Hazardous decomposition products	: Bromine Chlorine Nitrogen oxides (NOx) Carbon oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Acute oral toxicity	: LD50 (Rat): 485 mg/kg Method: FIFRA GLP: yes LD50 (Mouse, male): 700 mg/kg Method: FIFRA GLP: yes
Acute dermal toxicity	: LD50 (Rabbit): > 2,000 mg/kg Method: FIFRA

Dantoin™ BCDMH tablets

Skin corrosion/irritation

Species: Rabbit
 Exposure time: 4 h
 Method: OECD Test Guideline 404
 Result: Corrosive
 GLP: yes

Serious eye damage/eye irritation

Species: Rabbit
 Result: Corrosive
 Method: FIFRA
 GLP: yes

Respiratory or skin sensitisation

Test Type: Buehler Test
 Species: Guinea pig
 Result: Sensitising
 GLP: yes

Species: Mouse
 Method: OECD Test Guideline 429
 GLP: yes

Germ cell mutagenicity

Genotoxicity in vitro	: Test Type: Ames test Species: Salmonella typhimurium Metabolic activation: yes Method: OECD Test Guideline 471 Result: positive
	: Test Type: gene mutation test Species: mouse lymphoma cells Metabolic activation: yes Method: OECD Test Guideline 476 Result: positive
Genotoxicity in vivo	: Test Type: In vivo micronucleus test Species: Mouse Method: OECD Test Guideline 474 Result: negative
	Test Type: unscheduled DNA synthesis assay Species: Rat Method: OECD Test Guideline 486 Result: negative

Carcinogenicity

Remarks: no data available

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.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Dantoin™ BCDMH tablets

NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
Reproductive toxicity	
Effects on fertility	: Remarks: no data available
STOT - single exposure	
Remarks: no data available	
STOT - repeated exposure	
Remarks: no data available	
Aspiration toxicity	
No aspiration toxicity classification	
Further information	
Remarks: Information given is based on data on the components and the toxicology of similar products. No data is available on the product itself.	
Remarks: Ingestion may cause nausea, vomiting, sore throat, stomach-ache and eventually lead to a perforation of the intestine.	

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity	
Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 0.65 mg/l Exposure time: 96 h Method: US-EPA GLP: yes
	LC50 (Lepomis macrochirus (Bluegill sunfish)): 1.17 mg/l Exposure time: 96 h Method: US-EPA GLP: yes
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 0.87 mg/l Exposure time: 48 h Test Type: Immobilization Method: US-EPA GLP: yes
Toxicity to algae	: ErC50 (Desmodesmus subspicatus (green algae)): 2 mg/l End point: Growth rate Exposure time: 72 h Test Type: Growth inhibition Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes

Dantoin™ BCDMH tablets

Toxicity to microorganisms : EC50 (activated sludge): 20 mg/l
Exposure time: 3 h
Test Type: Respiration inhibition
Analytical monitoring: no
Method: OECD Test Guideline 209
GLP: yes

Persistence and degradability

Biodegradability : Result: no data available

Stability in water : Degradation half life (t1/2): <= 91 h (25 °C) pH: 7
Method: EPA-FIFRA
GLP: yes

Bioaccumulative potential

Bioaccumulation : Remarks: no data available

Mobility in soil

Distribution among environmental compartments : Remarks: no data available

Other adverse effects

Ozone-Depletion Potential : Regulation: US. EPA Clean Air Act (CAA) Section 602 Ozone-Depleting Substances (40 CFR 82, Subpt. A, App A & B)
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.

The following ecotoxicological data refer to:

5,5-Dimethylhydantoin(CAS-No.: 77-71-4)

Ecotoxicity

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 972 mg/l
Exposure time: 96 h
Analytical monitoring: no
Method: US-EPA
GLP: yes

LC50 (Pimephales promelas (fathead minnow)): 16,500 mg/l
Exposure time: 96 h

NOEC (Pimephales promelas (fathead minnow)): 14 mg/l
Exposure time: 33 d
Test Type: Early-life Stage
Analytical monitoring: yes
Method: FIFRA
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 6,200 mg/l
Exposure time: 48 h
Test Type: Immobilization

Dantoin™ BCDMH tablets

	Analytical monitoring: no Method: EPA-FIFRA GLP: no NOEC (Daphnia magna (Water flea)): 71 mg/l Exposure time: 21 d Test Type: Reproduction Test Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: yes
Toxicity to algae	: EC50 (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l Exposure time: 96 h Test Type: Growth inhibition Analytical monitoring: yes Method: OECD Test Guideline 201
Toxicity to microorganisms	: EC50 (activated sludge): > 1,000 mg/l Exposure time: 3 h Test Type: Respiration inhibition Analytical monitoring: no Method: OECD Test Guideline 209
Persistence and degradability	
Biodegradability	: Test Type: Die-Away Test Inoculum: activated sludge Concentration: 25 mg/l Result: Biodegradable Biodegradation: 94 % Exposure time: 19 d GLP: no
	Test Type: CO2 Evolution Test Inoculum: activated sludge Concentration: 10 mg/l Result: Readily biodegradable. Biodegradation: 88 % Exposure time: 28 d Method: OECD Test Guideline 301B GLP: yes
Stability in water	: Test Type: Abiotic degradation Degradation half life (t1/2): > 360 d (25 °C) pH: 5 - 9 Method: EPA-FIFRA GLP: yes
Bioaccumulative potential	
Bioaccumulation	: Species: Lepomis macrochirus (Bluegill sunfish) Bioconcentration factor (BCF): < 1.79 Exposure time: 42 d Method: OECD Test Guideline 305 GLP: yes Remarks: Does not bioaccumulate.

Mobility in soil

Distribution among environmental compartments	: Adsorption/Soil Method: EPA-FIFRA
---	--

Dantoin™ BCDMH tablets

Other adverse effectsno data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

- | | | |
|------------------------|---|--|
| Waste from residues | : | Dispose of contents/container in accordance with local regulation.
Contact waste disposal services.
Do not dispose of waste into sewer.
The product should not be allowed to enter drains, water courses or the soil. |
| Contaminated packaging | : | Dispose of as unused product.
Do not re-use empty containers. |
-

SECTION 14. TRANSPORT INFORMATION**DOT**

- | | | |
|-------------------------------------|---|--|
| UN number | : | 3085 |
| Proper shipping name | : | Oxidizing solid, corrosive, n.o.s.
(1-Bromo-3-chloro-5,5-dimethylhydantoin) |
| Transport hazard class | : | 5.1 |
| Packing group | : | III |
| Labels | : | 5.1 (8) |
| Emergency Response Guidebook Number | : | 140 |
| Environmental hazards | : | no |

Dantoin™ BCDMH tablets

TDG

UN number : 3085
Proper shipping name : OXIDIZING SOLID, CORROSIVE, N.O.S.
(1-Bromo-3-chloro-5,5-dimethylhydantoin)
Transport hazard class : 5.1
Packing group : III
Labels : 5.1 (8)
Environmental hazards : no

IATA

UN number : 3085
Proper shipping name : Oxidizing solid, corrosive, n.o.s.
(1-Bromo-3-chloro-5,5-dimethylhydantoin)
Transport hazard class : 5.1
Packing group : III
Labels : 5.1 (8)
Environmental hazards : no

IMDG

UN number : 3085
Proper shipping name : Oxidizing solid, corrosive, n.o.s.
(1-Bromo-3-chloro-5,5-dimethylhydantoin)
Transport hazard class : 5.1
Packing group : III
Labels : 5.1 (8)
EmS Number 1 : F-A
EmS Number 2 : S-Q
Environmental hazards : Marine pollutant: yes

ADR

UN number : 3085
Proper shipping name : OXIDIZING SOLID, CORROSIVE, N.O.S.
(1-Bromo-3-chloro-5,5-dimethylhydantoin)
Transport hazard class : 5.1
Packing group : III
Classification Code : OC2
Hazard Identification Number : 58
Labels : 5.1 (8)
Environmental hazards : yes

Dantoin™ BCDMH tablets

RID

UN number	: 3085
Proper shipping name	: OXIDIZING SOLID, CORROSIVE, N.O.S. (1-Bromo-3-chloro-5,5-dimethylhydantoin)
Transport hazard class	: 5.1
Packing group	: III
Classification Code	: OC2
Hazard Identification Number	: 58
Labels	: 5.1 (8)
Environmental hazards	: yes

Special precautions for user : none

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not applicable

SECTION 15. REGULATORY INFORMATION**TSCA SNUR/Export notifications****EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards

See above: SECTION 2. Hazard Identification-GHS Classification

SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

Dantoin™ BCDMH tablets

This product does not contain any VOC exemptions listed under the U.S. Clean Air Act Section 450.

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

Components	CAS-No.
1-Bromo-3-chloro-5,5-dimethylimidazolidine-2,4-dione	16079-88-2

New Jersey Right To Know

Components	CAS-No.
1-Bromo-3-chloro-5,5-dimethylimidazolidine-2,4-dione	16079-88-2

New York City Hazardous Substances

No components listed on the New York City Hazardous Substances List

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The product components have the following inventory status:

TSCA : All components of this product are listed on the EPA TSCA 8(b) inventory list.

NZIOC : HSNO Approved

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Ja-

Dantoin™ BCDMH tablets

pan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 2021.11.12

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Date format : yyyy/mm/dd

US / EN