

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.



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 regu-

lation.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture

Substance

Substance name : 2,4-Imidazolidinedione, bromochloro-5,5-dimethyl-

CAS-No. : 32718-18-6

Hazardous components

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

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.

If unconscious, place in recovery position and seek medical



advice.

If breathing is irregular or stopped, administer artificial respira-

tion.

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 difficul-

ty.

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 tis-

sue 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 ef-

fects, 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.



equipment and emergency proce-

dures

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 contain-

ment 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 ap-

plication 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 sun-

light.

Keep in a dry, cool and well-ventilated place.

Further information on storage con-

ditions

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



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 con-

centration 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 : $1.87 (73 \degree F / 23 \degree C)$

Method: OECD Test Guideline 109

GLP: yes



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



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

Test Type: In vivo micronucleus test Genotoxicity in vivo

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.



NTP No component of this product present at levels greater than or

equal to 0.1% is identified as a known or anticipated carcino-

gen 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 carcin-

ogen 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 aquat-

ic 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



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 aquat: :

ic invertebrates

EC50 (Daphnia magna (Water flea)): 6,200 mg/l

Exposure time: 48 h Test Type: Immobilization



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): $> 360 \text{ d} (25 ^{\circ}\text{C}) \text{ pH}: 5 - 9$

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



Other adverse effects

no data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of contents/container in accordance with local regula-

tion.

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: 5.1Packing group: IIILabels: 5.1 (8)Emergency Response Guidebook: 140

Number

Environmental hazards : no



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: 5.1Packing group: IIILabels: 5.1 (8)EmS Number 1: F-AEmS 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



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 SOCMI Intermediate or Final VOC's (40 CFR 60.489).



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-



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

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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