

Dantobrom™ RW

Version 1.0

MSDS Number: 000000003580

Revision Date: 2015.05.20

SECTION 1. IDENTIFICATION

Product name : Dantobrom™ RW
Synonyms : Dantobrom™ briquettes
Product code : 000000003580

Manufacturer or supplier's details

Company
CAPITAL TECHNOLOGIES, INC.
2118 WALNUT STREET
MCKEESPORT, PA 15132

: **Lonza Inc.** 412/664-7711
90 Boroline Road
Allendale, NJ 07401
USA
Business Telephone 1-201-316-9200

Lonza Inc.
1200 Bluegrass Lakes Pkwy
Alpharetta, GA 30004
USA
Business Telephone 1-678-624-5800

E-mail address : prodinfo@lonza.com
Emergency telephone number : +41 61 313 94 94 (24h)
For US only C I IEMTREC 1-800-424-9300

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 1C
Skin sensitisation : Category 1
Serious eye damage : Category 1
Acute toxicity (Oral) : Category 4
Skin corrosion : Category 1C
Skin sensitisation : Category 1
Serious eye damage : Category 1

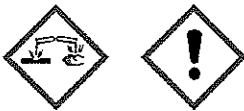
GHS Label element

Dantobrom™ RW

Version 1.0

MSDS Number: 000000003580

Revision Date: 2015.05.20

- 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.
- Precautionary statements : **Prevention:**
P260 Do not breathe dust.
P264 Wash hands 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.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
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/shower.
P363 Wash contaminated clothing before reuse
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310 Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P321 Specific treatment (see supplemental first aid instructions on this label).
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

Hazardous components

Chemical Name	CAS-No.	Concentration (%)
Bromochloro-5,5-dimethylimidazolidine-2,4-dione	32718-18-6	60.00
1,3-Dichloro-5,5-dimethylhydantoin	118-52-5	27.40
1,3-dichloro-5-ethyl-5-methylimidazolidine-2,4-	89415-87-2	10.60

Dantobrom™ RW

Version 1.0

MSDS Number: 000000003580

Revision Date: 2015.05.20

dione		
Sodium chloride	7647-14-5	1.00

SECTION 4. FIRST AID MEASURES

- If inhaled : Move to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Give oxygen.
First aider needs to protect himself.
Call a physician immediately.
- In case of skin contact : Take off all contaminated clothing immediately.
After contact with skin, wash immediately with plenty of soap and water.
Call a physician immediately.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Call a physician immediately.
- If swallowed : Call a physician immediately.
Clean mouth with water and drink afterwards plenty of water.
Do not induce vomiting without medical advice.
Never give anything by mouth to an unconscious person.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray
Dry powder
Foam
- Specific hazards during firefighting : Heating or fire can release toxic gas.
- Further information : Use water spray to cool unopened containers.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit.
- Environmental precautions
- General advice : Do not flush into surface water or sanitary sewer system.
- Methods and materials for containment and cleaning up : Sweep up or vacuum up spillage and collect in suitable container for disposal.

Dantobrom™ RW

Version 1.0

MSDS Number: 000000003580

Revision Date: 2015.05.20

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms.
Avoid contact with skin and eyes.
Avoid formation of respirable particles.
- 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.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
1,3-Dichloro-5,5-dimethylhydantoin	118-52-5	TWA	0.2 mg/m ³	ACGIH
		STEL	0.4 mg/m ³	ACGIH
		REL	0.2 mg/m ³	NIOSH/GUIDE
		STEL	0.4 mg/m ³	NIOSH/GUIDE
		PEL	0.2 mg/m ³	OSHA_TRANS
		TWA	0.2 mg/m ³	Z1A
		STEL	0.4 mg/m ³	Z1A
		TWA	0.2 mg/m ³	CAD ON OEL
		STEL	0.4 mg/m ³	CAD ON OEL

Appropriate engineering controls

Personal protective equipment

- Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.
- Hand protection
Material : Wear suitable gloves.
- Eye protection : Tightly fitting safety goggles
- Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.
No special protective equipment required.
- Hygiene measures : Wash hands before breaks and immediately after handling the product.
Avoid contact with skin, eyes and clothing.
Remove and wash contaminated clothing and gloves, including the inside, before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Briquettes

Dantobrom™ RW

Version 1.0

MSDS Number: 000000003580

Revision Date: 2015.05.20

Colour	: off-white
Odour	: slight, stinging
Odour Threshold	: no data available
pH	: 3.6, Concentration: 10 g/l (25 °C)suspension
Melting point/range	: 120 - 148 °C
Boiling point/boiling range	: no data available
Flash point	: 93.33 °C
Evaporation rate	: no data available
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: no data available
Density	: no data available
Solubility(ies)	
Water solubility	: 5.4 g/l (25 °C)
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Decomposition temperature	: no data available
Viscosity	
Viscosity, dynamic	: no data available
Viscosity, kinematic	: no data available
Oxidizing properties	: May intensify fire; oxidiser.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	: Stable under normal conditions.
Conditions to avoid	: Elevated temperature and impurities (alkalis). Protect from moisture.
Incompatible materials	: Bases Strong acids and oxidizing agents

Dantobrom™ RW

Version 1.0

MSDS Number: 000000003580

Revision Date: 2015.05.20

Hazardous decomposition products : Nitrogen oxides (NO_x)
Carbon oxides
Heating or fire can release toxic gas.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation
Ingestion
Eyes
Skin

Acute toxicity
Acute oral toxicity (LD50) : 441 mg/kg
Species: Rat
Method: FIFRA
GLP: yes

Skin corrosion/irritation
Skin irritation : Corrosive
Species: Rabbit
Method: Draize Test

non-corrosive
Species: Rabbit
Method: DOT

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Toxicity to daphnia and other aquatic invertebrates (EC50) : 0.19 mg/l
Species: Daphnia magna (Water flea)
Immobilization
Exposure time: 48 h
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae (ErC50) : 0.93 mg/l
Species: Desmodesmus subspicatus (green algae)
Growth inhibition
End point: Growth rate
Exposure time: 72 h
Test Type: Growth inhibition
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Persistence and degradability

no data available

Bioaccumulative potential**Components:****Sodium chloride**

Dantobrom™ RW

Version 1.0

MSDS Number: 000000003580

Revision Date: 2015.05.20

Partition coefficient: n-octanol/water : log Pow: -3

Mobility in soil

no data available

Other adverse effects

Additional ecological information : no data available

The following ecotoxicological data refer to:**Bromochloro-5,5-dimethylimidazolidine-2,4-dione** (CAS-No.: 32718-18-6)**Ecotoxicity**

- Toxicity to fish (LC50) : 0.65 mg/l
Species: Oncorhynchus mykiss (rainbow trout)
Acute toxicity
Exposure time: 96 h
Method: US-EPA
GLP: yes
- Toxicity to daphnia and other aquatic invertebrates (EC50) : 0.87 mg/l
Species: Daphnia magna (Water flea)
Immobilization
Exposure time: 48 h
Method: US-EPA
GLP: yes
- Toxicity to algae (ErC50) : 2 mg/l
Species: Desmodesmus subspicatus (green algae)
Growth inhibition
End point: Growth rate
Exposure time: 72 h
Test Type: Growth inhibition
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes
- Toxicity to bacteria (EC50) : 20 mg/l
Species: activated sludge
Respiration inhibition
Exposure time: 3 h
Test Type: Respiration inhibition
Analytical monitoring: no
Method: OECD Test Guideline 209
GLP: yes

Persistence and degradability

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

Dantobrom™ RW

Version 1.0

MSDS Number: 000000003580

Revision Date: 2015.05.20

Bioaccumulative potential

no data available

Mobility in soil

no data available

Other adverse effects

Additional ecological information : Information given is based on data on the components and the ecotoxicology of similar products.

1,3-dichloro-5-ethyl-5-methylimidazolidine-2,4-dione (CAS-No.: 89415-87-2)**Ecotoxicity**

- Toxicity to fish (LC50) : 1.1 mg/l
Species: Oncorhynchus mykiss (rainbow trout)
static test
Exposure time: 96 h
Analytical monitoring: no
Method: US-EPA
GLP: no
- Toxicity to fish (LC50) : 0.87 mg/l
Species: Lepomis macrochirus (Bluegill sunfish)
static test
Exposure time: 96 h
Analytical monitoring: no
Method: US-EPA
GLP: no
- Toxicity to daphnia and other aquatic invertebrates (EC50) : 0.95 mg/l
Species: Daphnia magna (Water flea)
Immobilization
Exposure time: 48 h
GLP: yes
- Toxicity to algae (EbC50) : 0.12 mg/l
Species: Pseudokirchneriella subcapitata (green algae)
Growth inhibition
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201
GLP: yes

Dantobrom™ RW

Version 1.0

MSDS Number: 000000003580

Revision Date: 2015.05.20

Toxicity to bacteria (EC50) : 26.2 mg/l

Species: activated sludge
Respiration inhibition
Exposure time: 3 h
Test Type: Respiration inhibition
Analytical monitoring: no
Method: OECD Test Guideline 209
GLP: yes

Persistence and degradability

Stability in water : Test Type: Abiotic degradation
Test substance: yes
GLP: yes

Bioaccumulative potential

no data available

Mobility in soil

no data available

Other adverse effects

no data available

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

Dantobrom™ RW

Version 1.0

MSDS Number: 000000003580

Revision Date: 2015.05.20

Toxicity to fish (LC50)	: > 972 mg/l Species: <i>Oncorhynchus mykiss</i> (rainbow trout) Acute toxicity Exposure time: 96 h Analytical monitoring: no Method: US-EPA GLP: yes
Toxicity to fish (LC50)	16,500 mg/l Species: <i>Pimephales promelas</i> (fathead minnow) Acute toxicity Exposure time: 96 h
Toxicity to fish (NOEC)	14 mg/l Species: <i>Pimephales promelas</i> (fathead minnow) Early-life Stage Exposure time: 33 d Analytical monitoring: yes Method: FIFRA GLP: yes
Toxicity to daphnia and other aquatic invertebrates (EC50)	: 6,200 mg/l Species: <i>Daphnia magna</i> (Water flea) Immobilization Exposure time: 48 h Analytical monitoring: no Method: EPA-FIFRA GLP: no
Toxicity to daphnia and other aquatic invertebrates (NOEC)	: 71 mg/l Species: <i>Daphnia magna</i> (Water flea) Reproduction Test Exposure time: 21 d Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: yes
Toxicity to algae (EC50)	: > 1,000 mg/l Species: <i>Pseudokirchneriella subcapitata</i> Growth inhibition Exposure time: 96 h Test Type: Growth inhibition Analytical monitoring: yes Method: OECD Test Guideline 201
Toxicity to bacteria (EC50)	: > 1,000 mg/l Species: activated sludge Respiration inhibition Exposure time: 3 h Test Type: Respiration inhibition Analytical monitoring: no Method: OECD Test Guideline 209 GLP: yes

Persistence and degradability

Dantobrom™ RW

Version 1.0

MSDS Number: 000000003580

Revision Date: 2015.05.20

- 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

Mobility in soil

no data available

Other adverse effects

no data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

- Waste from residues**
- : Dispose of in accordance with local regulations.
Can be landfilled or incinerated, when in compliance with local regulations.
- Contaminated packaging**
- : CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Dantobrom™ RW

Version 1.0

MSDS Number: 000000003580

Revision Date: 2015.05.20

SECTION 14. TRANSPORT INFORMATION**IATA**

UN number : 3085
Proper shipping name : Oxidizing solid, corrosive, n.o.s.
 (Bromochloro-5,5-dimethylimidazolidine-2,4-dione)
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.
 (Bromochloro-5,5-dimethylimidazolidine-2,4-dione)
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.
 (Bromochloro-5,5-dimethylimidazolidine-2,4-dione)
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.
 (Bromochloro-5,5-dimethylimidazolidine-2,4-dione)
Transport hazard class : 5.1
Packing group : III
Classification Code : OC2
Hazard Identification Number : 58
Labels : 5.1 (8)
Environmental hazards : yes

Dantobrom™ RW

Version 1.0

MSDS Number: 000000003580

Revision Date: 2015.05.20

DOT

UN number : 3085
Proper shipping name : Oxidizing solid, corrosive, n.o.s.
 (Bromochloro-5,5-dimethylimidazolidine-2,4-dione)
Transport hazard class : 5.1
Packing group : III
Labels : 5.1 (8)
Emergency Response Guidebook Number : 140
Environmental hazards : yes

TDG

UN number : 3085
Proper shipping name : OXIDIZING SOLID, CORROSIVE, N.O.S.
 (Bromochloro-5,5-dimethylimidazolidine-2,4-dione)
Transport hazard class : 5.1
Packing group : III
Labels : 5.1 (8)
Environmental hazards : no

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**EPCRA - Emergency Planning and Community Right-to-Know Act**

SARA 311/312 Hazards : Acute Health Hazard

SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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.

US State Regulations**Massachusetts Right To Know**

1,3-Dichloro-5,5-dimethylhydantoin

118-52-5

Massachusetts Right To Know

Dantobrom™ RW

Version 1.0

MSDS Number: 000000003580

Revision Date: 2015.05.20

	1,3-Dichloro-5,5-dimethylhydantoin	118-52-5	20 - 30 %
Pennsylvania Right To Know			
	1,3-Dichloro-5,5-dimethylhydantoin	118-52-5	
Pennsylvania Right To Know			
	Bromochloro-5,5-dimethylimidazolidine-2,4-dione	32718-18-6	50 - 70 %
	1,3-Dichloro-5,5-dimethylhydantoin	118-52-5	20 - 30 %
	1,3-dichloro-5-ethyl-5-methylimidazolidine-2,4-dione	89415-87-2	10 - 20 %
New Jersey Right To Know			
	1,3-Dichloro-5,5-dimethylhydantoin	118-52-5	
New Jersey Right To Know			
	Bromochloro-5,5-dimethylimidazolidine-2,4-dione	32718-18-6	50 - 70 %
	1,3-Dichloro-5,5-dimethylhydantoin	118-52-5	20 - 30 %
	1,3-dichloro-5-ethyl-5-methylimidazolidine-2,4-dione	89415-87-2	10 - 20 %
	Sodium chloride	7647-14-5	1 - 5 %

SECTION 16. OTHER INFORMATION

Revision Date : 2015.05.20

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.