



## SAFETY DATA SHEET

FOR ANY EMERGENCY, 24 HOURS/7 DAYS, CALL:	1-800-222-1222
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®:	1-800-424-9300 (OUTSIDE USA: 1-703-527-3887)
FOR ALL SDS QUESTIONS & REQUESTS, CALL:	1-844-692-4772

### PRODUCT NAME: pHin™ Red Striped, Bromine Tablets for Hot Tubs

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## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

### Supplier

ConnectedYard Inc.  
380 Portage Avenue  
Palo Alto, CA 94306 USA

Telephone: +18446924772

Web: [www.phin.co](http://www.phin.co)

### Manufacturer

Advantis Technologies  
1200 Bluegrass Lakes Parkway  
Alpharetta, GA 30004 USA

DATE CREATED: 12/01/2016

MSDS Number: 000000024506

SYNONYMS: none

CHEMICAL FAMILY: None

DESCRIPTION / USE Water treatment chemical

FORMULA: None established

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## SECTION 2. HAZARDS IDENTIFICATION




### GHS Classification

Oxidizing solids	:	Category 3
Acute toxicity (Oral)	:	Category 4
Skin irritation	:	Category 2
Skin sensitisation	:	Category 1
Serious eye damage	:	Category 1



## SAFETY DATA SHEET

### GHS label elements

Hazard pictograms	:	  
Signal word	:	Danger
Hazard statements	:	H272 May intensify fire; oxidizer. H302 Harmful if swallowed. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage.
Precautionary statements	:	<b>Prevention:</b> P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P220 Keep/Store away from clothing/ combustible materials. P221 Take any precaution to avoid mixing with combustibles. P261 Avoid breathing vapours. 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. <b>Response:</b> P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. P305 + P351 + P338 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/doctor. P321 Specific treatment (see supplemental first aid instructions on this label). P330 Rinse mouth. P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. <b>Disposal:</b> P501 Dispose of contents/container in accordance with local regulation.

### Other hazards

None known.



### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>CAS OR CHEMICAL NAME</u>	<u>CAS #</u>	<u>% RANGE</u>
2,4-IMIDAZOLIDINEDIONE, 1-BROMO-3-CHLORO-5,5-DIMETHYL	16079-88-2	49 - 59
2,4-IMIDAZOLIDINEDIONE, 1,3-DICHLORO-5,5-DIMETHYL	118-52-5	23 - 33
2,4-IMIDAZOLIDINEDIONE, 1,3-DICHLORO-5-ETHYL-5-METHYL	89415-87-2	10 - 20
SODIUM CHLORIDE	7647-14-5	0 - 6

Specific percentages of composition have been withheld as trade secrets.

### SECTION 4. FIRST AID MEASURES

General Advice:	Call a poison control center or doctor for treatment advice. For 24-hour emergency medical assistance, call 1-800-222-1222. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
Inhalation:	IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Skin Contact:	IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Eye Contact:	IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Ingestion:	IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Notes to Physician:	Probable mucosal damage may contraindicate the use of gastric lavage.
Most Important Symptoms, Acute and Delayed:	H302 Harmful if swallowed. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage.



Immediate Medical  
Attention Required:

IF IN EYES: Hold eye open and rinse slowly and call a poison control center or doctor for treatment advice.

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## **SECTION 5. FIREFIGHTING MEASURES**

Flammability Summary (OSHA): Combustible above 93 deg. C / 200 deg. F.

### Flammable Properties

Flash Point: > 93.34 °C

Autoignition Temperature: no data available

Fire / Explosion Hazards: May intensify fire; oxidizer. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Dust in air can be an explosion hazard.

Extinguishing Media: Water Foam Dry chemical

Fire Fighting Instructions: Use water spray to cool unopened containers. In case of fire, Use normal fire-fighting equipment and the personal protective equipment recommended in Section 8 to include a NIOSH approved self-contained breathing apparatus.

Upper Flammable / Explosive Limit,  
% in air: no data available

Lower Flammable / Explosive Limit,  
% in air: no data available

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal Protection for Emergency Situations: Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to boots, impervious gloves, hard hat, splash-proof goggles, impervious clothing, i.e., chemically impermeable suit, self-contained breathing apparatus.

### Spill Mitigation Procedures

Air Release: Keep people away from and upwind of spill/leak.

Water Release: If the product contaminates rivers and lakes or drains inform respective authorities.

Land Release: Sweep up and shovel into suitable containers for disposal. Avoid creating dust.

Additional Spill Information: Prevent further leakage or spillage if safe to do so. Use personal protective equipment as required. Evacuate personnel to safe areas. Remove all sources of ignition.



## SECTION 7. HANDLING AND STORAGE

Handling: Do not take internally. Avoid contact with skin, eyes and clothing. If in eyes or on skin, rinse well with water. Avoid breathing dust.

Storage: Store in a cool dry ventilated location, away from sources of Ignition or other incompatible conditions and chemicals. Keep container(s) closed.

Shelf Life Limitations: Maximum storage temperature:

Incompatible Materials for Storage: Refer to Section 10, "Incompatible Materials."

Do Not Store At temperatures Above: 37 °C

Empty Container Warning: Empty containers retain hazardous residue, dispose of accordingly.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to keep airborne exposures below the TLV, PEL or other recommended exposure limit.

### Protective Equipment for Routine Use of Product

Respiratory Protection: Wear a NIOSH approved respirator if levels above the exposure limits are possible, a NIOSH approved air purifying respirator with organic vapor cartridge and N95 particulate filter. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.

Skin Protection: Impervious gloves When exposure to high concentrations are prolonged or repeated use protective boots and apron in addition to gloves.

Eye Protection: Chemical resistant goggles must be worn.

Protective Clothing Type: Impervious clothing, Neoprene

General Protective Measures: Ensure that eyewash stations and safety showers are close to the workstation location.

### Components with workplace control parameters

Components (CAS-No.)	Value	Control parameters	Basis (Update)
2,4-IMIDAZOLIDINEDIONE, 1,3-DICHLORO-5,5-DIMETHYL (118-52-5)	TWA	0.2 mg/m3	ACGIH (02 2014)
	STEL	0.4 mg/m3	ACGIH (02 2014)

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical State:	solid Form tablet
Color:	off-white
Odor:	slight, pungent
Odor Threshold:	no data available
Molecular Weight:	no data available
Relative density:	no data available
pH:	3.6
	77.0 °F (25.0 °C) 10.0 g/l
Boiling Point:	Not applicable
Melting point/freezing Point:	248 - 298 °F (120 - 148 °C)
Flash Point:	no data available
Density:	no data available
Vapor Pressure:	Not applicable
Vapor Density:	no data available
Viscosity:	Not applicable
Solubility in Water:	5.4 g/l (@ 25 Deg. C)
Partition coefficient n-octanol/water:	Not applicable
Evaporation Rate:	Not applicable
Oxidizing:	Product has oxidizing properties.
Volatiles, % by vol.:	Not volatile
VOC Content:	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). This product does not contain any VOC exemptions listed under the U.S. Clean Air Act Section 450.
HAP Content:	Not applicable
Upper/Lower Flammability: or Explosive Limits:	no data available
Autoignition Temperature:	no data available
Decomposition Temperature:	no data available

**SECTION 10. STABILITY AND REACTIVITY**

Stability and Reactivity Summary:	Stable under normal conditions., Product will not undergo hazardous polymerization.
Conditions to Avoid:	Heat, flames and sparks., Exposure to moisture
Chemical Incompatibility:	Strong acids and strong bases, Oxidizing agents, Reducing agents, Organic materials, Avoid moisture.
Hazardous Decomposition Products:	Carbon oxides, Bromine, Chlorine, Nitrogen
Decomposition Temperature:	No data

**SECTION 11. TOXICOLOGICAL INFORMATION**Component Animal ToxicologyOral LD50 value:

2,4-  
IMIDAZOLIDINEDIONE ,  
1-BROMO-3-  
CHLORO-5,5-  
DIMETHYL                      LD50 = 929 mg/kg                      Rat

2,4- IMIDAZOLIDINEDIONE ,      LD50 = 542 mg/kg                      Rat  
1,3-DICHLORO-5,5-  
DIMETHYL

2,4-                                      no data available  
IMIDAZOLIDINEDIONE ,

1,3-DICHLORO-5-  
ETHYL-5-METHYL  
SODIUM CHLORIDE                      LD50 = 3,000 mg/kg                      Rat

Component Animal ToxicologyDermal LD50 value:

2,4-                                      LD50 > 2,000 mg/kg                      Rabbit  
IMIDAZOLIDINEDIONE ,  
1-BROMO-3-  
CHLORO-5,5-  
DIMETHYL

2,4-                                      LD50 > 20,000 mg/kg                      Rabbit  
IMIDAZOLIDINEDIONE ,  
1,3-DICHLORO-5,5-  
DIMETHYL

2,4-                                      no data available  
IMIDAZOLIDINEDIONE ,

1,3-DICHLORO-5-  
ETHYL-5-METHYL  
SODIUM CHLORIDE                      LD50 > 10,000 mg/kg                      Rabbit

Component Animal ToxicologyInhalation LC50 value:

2,4-                                      Inhalation LCLo 1 h = 20 mg/l                      Rat  
IMIDAZOLIDINEDIONE ,  
1,3-DICHLORO-5,5-  
DIMETHYL

2,4-                                      no data available



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IMIDAZOLIDINEDIONE ,  
1,3-DICHLORO-5-  
ETHYL-5-METHYL  
SODIUM CHLORIDE

Inhalation LC50 1 h > 42 mg/l Rat

Product Animal Toxicity

Oral LD50 value: LD50 = 468 - 477 mg/kg Rat

Dermal LD50 value: LD50 Believed to be > 2,000 mg/kg Rabbit

Inhalation LC50 value: LC50 no data available

Skin Irritation: This material is expected to be mildly to moderately irritating. Draize score, Rabbit = 3.84/8.0

Eye Irritation: Corrosive to eyes Skin Sensitization: May cause allergic skin sensitization in some individuals.

2,4-IMIDAZOLIDINEDIONE, 1- Positive skin sensitizer, guinea pig - Buehler Method  
BROMO-3-CHLORO-5,5-  
DIMEMETHYL

2,4-IMIDAZOLIDINEDIONE, 1,3- Positive skin sensitizer, guinea pig - Buehler Method  
DICHLORO-5,5-DIMETHYL

Acute Toxicity: Corrosive to the eyes and mildly to moderately irritating to the skin and Respiratory tract.

Subchronic / Chronic Toxicity: Not known or reported to cause subchronic or chronic toxicity.

Reproductive and Developmental Toxicity: Not known or reported to cause reproductive or developmental toxicity.

Mutagenicity: Not known or reported to be mutagenic.

2,4-IMIDAZOLIDINEDIONE, 1,3- This product was determined to be non-mutagenic in  
DICHLORO-5,5-DIMETHYL the Ames assay.

2,4-IMIDAZOLIDINEDIONE, 1,3- Not known or reported to be mutagenic.  
DICHLORO-5-ETHYL-5-METHYL

Carcinogenicity: This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA.

2,4-IMIDAZOLIDINEDIONE, 1,3- This chemical is not known or reported to be  
DICHLORO-5,5-DIMETHYL carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

2,4-IMIDAZOLIDINEDIONE, 1,3- This chemical is not known or reported to be  
DICHLORO-5-ETHYL-5-METHYL carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.





## SECTION 12. ECOLOGICAL INFORMATION

Overview: Highly toxic to fish and other aquatic organisms.

### Ecological Toxicity Values - Product:

Oncorhynchus mykiss (rainbow trout)	-	96 h LC50 = 0.5 mg/l
Lepomis macrochirus (Bluegill sunfish)	-	96 h LC50 = 1.2 mg/l
Cyprinodon variegatus (sheepshead minnow)	-	96 h LC50 = 1.4 mg/l (as Br2)
Daphnia magna (Water flea)	-	48 h LC50= 0.4 mg/l
Mysid shrimp	-	96 h LC50= 0.93 mg/l
Crassostrea virginica (Eastern oyster)	-	96 h EC50= 0.84 mg/l (as Br2)

### Ecological Toxicity Values for: 2,4-IMIDAZOLIDINEDIONE, 1-BROMO-3-CHLORO-5,5-DIMETHYL

Oncorhynchus mykiss (rainbow trout)	-	static test 96 h LC50 = 0.40 mg/l
Lepomis macrochirus (Bluegill sunfish)	-	static test 96 h LC50 = 0.46 mg/l
Cyprinodon variegatus (sheepshead minnow)	-	flow-through test 96 h LC50 = 1.2 mg/l
Daphnia magna (Water flea)	-	static test 48 h EC50= 0.75 mg/l
Opossum Shrimp	-	flow-through test 96 h LC50= 0.92 mg/l
Crassostrea virginica (Eastern oyster)	-	flow-through test 96 h EC50= 1.1 mg/l
Colinus virginianus (Bobwhite quail)	-	Oral LD50 = 1,839 mg/kg
Colinus virginianus (Bobwhite quail)	-	Dietary LC50 > 5,620 ppm
Anas platyrhynchos (Mallard duck)	-	Dietary LC50 > 5,000 ppm

## SECTION 13. DISPOSAL CONSIDERATIONS

**CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.**

Waste Disposal Summary: If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001. As a hazardous solid waste, it must be disposed of in accordance with local, state and federal regulations.



## SECTION 14. TRANSPORT INFORMATION

### DOT

UN number : 3085  
Description of the goods : Oxidizing solid, corrosive, n.o.s.  
(Halogenated hydantoins)  
Class : 5.1  
Packing group : III  
Labels : 5.1 (8)  
Emergency Response : 140  
Guidebook Number :

### TDG

UN number : 3085  
Description of the goods : OXIDIZING SOLID, CORROSIVE, N.O.S.  
(Halogenated hydantoins)  
Class : 5.1  
Packing group : III  
Labels : 5.1 (8)

### IATA

UN number : 3085  
Description of the goods : Oxidizing solid, corrosive, n.o.s.  
(Halogenated hydantoins)  
Class : 5.1  
Packing group : III  
Labels : 5.1 (8)  
Packing instruction (cargo aircraft) : 563  
Packing instruction (passenger aircraft) : 559  
Packing instruction (passenger aircraft) : Y545

### IMDG-CODE

UN number : 3085  
Description of the goods : OXIDIZING SOLID, CORROSIVE, N.O.S.  
(Halogenated hydantoins)  
Class : 5.1  
Packing group : III  
Labels : 5.1 (8)  
EmS Number 1 : F-A  
EmS Number 2 : S-Q  
Marine pollutant : yes



## SECTION 15. REGULATORY INFORMATION

**This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals.**

Signal word : DANGER!  
Hazard statements : Causes substantial but temporary eye injury.  
Corrosive. Causes skin burns.  
Corrosive. Causes irreversible eye damage.  
This pesticide is toxic to fish.

### **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 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.

### **Clean Air Act**

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

### **Clean Water Act**

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

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

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**

1,3-dichloro-5,5-dimethylhydantoin 118-52-5

**Pennsylvania Right To Know**

1-bromo-3-chloro-5,5-dimethylimidazolidine-2,4-Dione 16079-88-2

1,3-dichloro-5,5-Dimethylhydantoin 118-52-5

1,3-dichloro-5-ethyl-5-methylimidazolidine-2,4-dione 89415-87-2

**New Jersey Right To Know**

1-bromo-3-chloro-5,5-dimethylimidazolidine-2,4-Dione 16079-88-2

1,3-dichloro-5,5-Dimethylhydantoin 118-52-5

1,3-dichloro-5-ethyl-5-methylimidazolidine-2,4-dione 89415-87-2

**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 components of this product are reported in the following inventories:**

TSCA : This is an EPA registered pesticide.

**Inventories**

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

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**SECTION 16. OTHER INFORMATION**

DATE PREPARED: 12/1/2016  
Major References: Available upon request.



## SAFETY DATA SHEET

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. CONNECTEDYARD INC. BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT CONNECTEDYARD MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT.