Arch Chemicals, Inc.

SAFETY DATA SHEET

FOR ANY EMERGENCY, 24 HOURS / 7 DAYS, CALL:	1-800-654-6911 (OUTSIDE USA: 1-423-780-2970)
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®:	1-800-424-9300 (OUTSIDE USA: 1-703-527-3887)
FOR ALL SDS QUESTIONS & REQUESTS, CALL:	1-800-511-MSDS (OUTSIDE USA: 1-423-780-2347)

PRODUCT NAME: **Brilliance for spas bromo tabs**
EPA Registration Number: 6836-116-1258

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Arch Chemicals, Inc.
1200 Bluegrass Lakes Parkway
Alpharetta, GA 30004

REVISION DATE:	08/10/2016
SUPERCEDES:	05/27/2015
MSDS Number:	000000023477
SYNONYMS:	none
CHEMICAL FAMILY:	Mixture of halogenated hydantoins
DESCRIPTION / USE	Spa & Hot Tub SanitizerWater treatment chemical
FORMULA:	NOT APPLICABLE/MIXTURE

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Oxidizing solids	:	Category 1
Acute toxicity (Oral)	:	Category 4
Acute toxicity (Inhalation)	:	Category 4
Skin corrosion	:	Category 1B
Serious eye damage	:	Category 1
Skin sensitisation	:	Category 1
Specific target organ toxicity - single exposure	:	Category 3 (Respiratory system)

GHS label elements

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	H271 May cause fire or explosion; strong oxidizer. H302 + H332 Harmful if swallowed or if inhaled H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H335 May cause respiratory irritation.
Precautionary statements	:	**Prevention:** P210 Keep away from heat. P220 Keep/Store away from clothing/ combustible materials. P221 Take any precaution to avoid mixing with combustibles. P260 Do not breathe dust or mist. P264 Wash skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P283 Wear fire/ flame resistant/ retardant clothing. **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/shower. 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. P306 + P360 IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes. P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention. P363 Wash contaminated clothing before reuse. P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. P371 + P380 + P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. **Storage:** P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS OR CHEMICAL NAME	CAS #	% RANGE
2,4-IMIDAZOLIDINEDIONE, 1-BROMO-3-CHLORO-5,5-DIMEMETHYL	16079-88-2	54.2
2,4-IMIDAZOLIDINEDIONE, 1,3-DICHLORO-5,5-DIMETHYL	118-52-5	28.9
2,4-IMIDAZOLIDINEDIONE, 1,3-DICHLORO-5-ETHYL-5-METHYL	89415-87-2	15.9
SODIUM CHLORIDE	7647-14-5	1.0

SECTION 4. FIRST AID MEASURES

General Advice: Call a poison control center or doctor for treatment advice. For 24-hour emergency medical assistance, call Arch Chemical Emergency Action Network at 1-800-654-6911. 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.

SECTION 5. FIREFIGHTING MEASURES

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

Flammable Properties

Flash Point:	> 93 °C / 200 °F
Autoignition Temperature:	no data available
Fire / Explosion Hazards:	Strong oxidizer Dust in air can be an explosion hazard. If the product is involved in a fire, toxic smokes could develop.
Extinguishing Media:	Water in flooding quantities Foam Dry chemical
Fire Fighting Instructions:	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.
Hazardous Combustion Products:	During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Upper Flammable / Explosive Limit, % in air:	no data available
Lower Flammable / Explosive Limit, % in air:	no data available

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:	Hazardous concentrations in air may be found in local spill area and immediately downwind. Dusting from this product could occur. Contain all solids for treatment and/or disposal as a potential hazardous waste.
Water Release:	This material is heavier than water. This material is soluble in water. Notify all downstream users of possible contamination. Divert water flow around spill if possible and safe to do so. Contain all solids for treatment and/or disposal as a potential hazardous waste.
Land Release:	Sweep up and place in suitable clean, dry containers for reclamation or later disposal. Do not place spill materials back in their original containers. Neutralize any residue with dilute, alkaline sodium bisulfite or thiosulfate solution; absorb with sand or vermiculite and place in a compatible container for disposal. If spilled material is wet, neutralize and proceed as stated above. Contain all solids for treatment and/or disposal as a potential hazardous waste.
Additional Spill Information :	Remove all sources of ignition. Stop source of spill as soon as possible and notify appropriate personnel. Utilize emergency response personal protection equipment prior to the start of any response. Evacuate all non-essential personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration.

SECTION 7. HANDLING AND STORAGE

Handling:	Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Avoid inhalation of dust and fumes.
Storage:	Store in a cool dry ventilated location, away from sources of ignition or other incompatible conditions and chemicals. Keep container(s) closed. Avoid direct exposure to sunlight. Avoid creating dusts.
Incompatible Materials for Storage:	Refer to Section 10, "Incompatible Materials."
Do Not Store At temperatures Above:	37.7 °C

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.
Respirator Type :	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 :	Wear impervious gloves to avoid skin contact. When exposure to high concentrations are prolonged or repeated use protective boots and apron in addition to gloves.
Eye Protection:	Use chemical goggles.
Protective Clothing Type:	Impervious, Neoprene
General Protective Measures:	An eye wash and safety shower should be provided in the immediate work area.

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:	white
Odor:	Slightly pungent
Molecular Weight:	Not Applicable/Mixture
Relative density	no data available
pH :	3.6 77 °F (25 °C) 10.0 g/l
Boiling Point:	Not applicable
Melting point/freezing point	Not applicable
Density	no data available
Vapor Pressure:	Not applicable
Vapor Density:	no data available
Viscosity:	Not applicable
Fat Solubility:	no data available
Solubility in Water:	5.4 g/l 77 °F (25 °C)
Partition coefficient n-octanol/water:	Not applicable
Evaporation Rate:	Not applicable
Oxidizing:	Product has oxidizing properties.
Volatiles, % by vol.:	no data available
VOC Content	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.
HAP Content	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Stable under normal conditions. Not sensitive to mechanical shock. Not sensitive to static discharge. Product is an oxidizer. Corrosive. Product will not undergo hazardous polymerization.
Conditions to Avoid:	Sparks, open flame, other ignition sources, and elevated temperatures., Exposure to moist air or water, Contact with incompatible substances
Chemical Incompatibility:	Strong acids, strong bases, Oxidizing, moisture
Hazardous Decomposition Products:	Carbon monoxide, Carbon dioxide, Chlorine, Bromine, Nitrogen, Organic materials
Decomposition Temperature:	120 °C - , 248 °F-

SECTION 11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology
Oral LD50 value:

2,4-IMIDAZOLIDINEDIONE, 1-BROMO-3-CHLORO-5,5-DIMEMETHYL	LD50	=	929 mg/kg	Rat
2,4-IMIDAZOLIDINEDIONE, 1,3-DICHLORO-5,5-DIMETHYL	LD50	=	542 mg/kg	Rat
2,4-IMIDAZOLIDINEDIONE, 1,3-DICHLORO-5-ETHYL-5-METHYL	no data available			
SODIUM CHLORIDE	LD50	=	3,000 mg/kg	Rat

Component Animal Toxicology
Dermal LD50 value:

2,4-IMIDAZOLIDINEDIONE, 1-BROMO-3-CHLORO-5,5-DIMEMETHYL	LD50	>	2,000 mg/kg	Rabbit
2,4-IMIDAZOLIDINEDIONE, 1,3-DICHLORO-5,5-DIMETHYL	LD50	>	20,000 mg/kg	Rabbit
2,4-IMIDAZOLIDINEDIONE, 1,3-DICHLORO-5-ETHYL-5-METHYL	no data available			
SODIUM CHLORIDE	LD50	>	10,000 mg/kg	Rabbit

Component Animal Toxicology
Inhalation LC50 value:

2,4-IMIDAZOLIDINEDIONE, 1,3-DICHLORO-5,5-DIMETHYL	Inhalation LCLo 1 h	=	20 mg/l	Rat
2,4-IMIDAZOLIDINEDIONE, 1,3-DICHLORO-5-ETHYL-5-METHYL	no data available			
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:	Inhalation LC50 no data available Inhalation LC50 no data available
Skin Irritation:	Expected to be corrosive.
Eye Irritation:	This material is expected to be corrosive.
Skin Sensitization:	May cause allergic skin sensitization in some individuals.

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

Acute Toxicity:	Corrosive to eyes and skin
Subchronic / Chronic Toxicity:	Not known or reported to cause subchronic or 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-DICHLORO-5,5-DIMETHYL	This product was determined to be non-mutagenic in the Ames assay.
2,4-IMIDAZOLIDINEDIONE, 1,3-DICHLORO-5-ETHYL-5-METHYL	Not known or reported to be mutagenic.

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

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.
Disposal Methods :	As a hazardous solid waste it should be disposed of in accordance with local, state and federal regulations.
Potential US EPA Waste Codes :	D001

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 Guidebook Number	:	140

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 SOCMI 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. CleanWater Act, Section 311, Table 116.4A.

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

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
Sodium chloride	7647-14-5

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
Sodium chloride	7647-14-5

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)

SECTION 16. OTHER INFORMATION

SECTIONS REVISED: 14
Major References : Available upon request.

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. ARCH CHEMICALS 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 ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT. .