

Safety Data Sheet

1. IDENTIFICATION OF THE PRODUCT AND THE SUPPLIER

1.1 Product identifiers

Product name : BROMOCHLORODIMETHYLHYDANTOIN

1.2 Other means of identification

Pool & spa bromine, BCDMH, brominating tablets, 1-bromo-3-chloro-5,5-dimethylhydantoin.

1.3 Recommended use of the product and restrictions on use

Swimming pool & spa sanitiser, algacide, bactericide, water purification & oxidising agent

1.4 Details of supplier of the safety data sheet

Company : AGent Sales & Services Pty Ltd

Street address : 38 May Holman Drive, Bassendean, Western Australia 6054

Telephone : (+61 8) 6270 4500

Fax : (+61 8) 6270 4544

1.5 Emergency telephone number

Telephone : 1300 883 844

2. HAZARDS IDENTIFICATION

Classified as DANGEROUS GOODS by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail.

HAZARDOUS according to the criteria of the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals & Safe Work Australia.

2.1 GHS Classification

Oxidising solids (Category 3)

Acute toxicity, Oral (Category 4)

Skin Corrosion (Category 1B)

Skin sensitiser (Category 1)

Acute aquatic toxicity (Category 1)

2.2 GHS Label elements, including precautionary statements



Pictogram :

Signal word : DANGER

Hazard statement(s)

H272 May intensify fire; oxidiser.

H332 Harmful if inhaled.

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation..

Precautionary statement(s)

Prevention

P210	Keep away from heat.
P220	Keep/Store away from clothing/ combustible materials.
P232	Protect from moisture.
P233	Keep container tightly closed.
P235	Keep cool.
P260	Do not breathe dust or mist.
P262	Do not get in eyes, on skin or on clothing.
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.
P281	Use personal protective equipment as required.

Response

P335	Brush off loose particles from skin.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P309 + P311	Immediately call a POISON CENTER or doctor/ physician.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391	Collect spillage.

Storage

P405	Store locked up.
P410	Protect from sunlight.
P402 + P404	Store in a dry place. Store in a closed container.
P403 + P235	Store in a well ventilated place. Keep cool.

Disposal

P501	Dispose of contents/ container to an approved waste disposal plant.
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2.3 Other hazards

Contact with acids liberates toxic gas.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS Number	Classification	Concentration (%)
1-Bromo-3-chloro-5,5-dimethylhydantoin	16079-88-2	Ox. Sol. 2; Acute Tox. 4; Skin Corr. 1; Eye Dam. 1; Aquatic Acute 1; H272, H302, H314, H400	96
Ingredients determined to be non-hazardous	-	N/A	Balance

For the full text of the H-Statements mentioned in this section, see Section 16

4. FIRST AID MEASURES

4.1 Description of First Aid measures

General advice

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

If inhaled

If inhalation occurs, contact a Poisons Information Centre, or call a doctor at once. Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

In case of skin contact

Quickly and gently brush away excess particles. Seek immediate medical attention. Remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Flush contaminated area with lukewarm, gently flowing water for at least 20-30 minutes, by the clock. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting (show paramedics this MSDS and take their advice). If irritation persists, repeat flushing. Seek medical attention.

In case of eye contact

Quickly and gently brush particles from eyes. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 60 minutes, by the clock, while holding the eyelid(s) open. Neutral saline solution may be used as soon as it is available. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting (show paramedics this MSDS and take their advice). Take care not to rinse contaminated water into the unaffected eye or onto face. Call a Poisons Information Centre or a doctor urgently. Take special care if exposed person is wearing contact lenses

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a doctor/physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in Section 2.2 and/or Section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

4.4 First Aid facilities

Eye wash facilities and safety shower should be available.

5. FIRE FIGHTING MEASURES

5.1 Suitable extinguishing media

Not combustible. Only use large quantities of water to extinguish fires involving this product. Try to contain spills, minimise spillage entering drains or water courses. DO NOT use dry chemical or ammonium phosphate-based fire extinguishers due to the potential for violent reaction. Smothering is ineffective due to product's oxidising properties.

5.2 Special hazards arising from the chemical

The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is a moderate risk of an explosion from this product if commercial quantities are involved in a fire. Firefighters should take care and appropriate precautions. The presence of this product in a fire is likely to intensify the fire due to its oxidising properties. Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

5.3 Special protective equipment and precautions for fire fighters

Wear self-contained breathing apparatus and suitable protective clothing.

5.4 Hazchem code

1Y

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see Section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. If contamination of sewers or waterways has occurred, advise local emergency services. Observe all local and national regulations.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Use clean, non-sparking tools and equipment. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see Section 13). Do not flush with water. Keep in suitable, closed containers for disposal. Do NOT return spilled product to original container.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition – No smoking. Keep away from heat and sources of ignition. Take precautionary measures against static discharges by bonding and grounding equipment. Do NOT mix with other chemicals. Do NOT add water to the product - add the product to the water. Use only clean utensils for handling as remnants of other products may cause a violent reaction leading to fire or explosion. For precautions see Section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry, well-ventilated place and out of direct sunlight. Check regularly for spills. Never allow product to get in contact with water during storage. Store away from sources of heat and ignition. Do not store near acids. Store away from incompatible materials described in Section 10.

This material is classified as a Dangerous Goods Class 5.1 Oxidising Substance by the criteria of the ADG Code and must be stored and handled in accordance with the relevant regulations.

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Chemical Name	Reference	TWA – Peak Limitation		STEL		Carcinogen Category	Notices
		ppm	mg/m ³	ppm	mg/m ³		
Chlorine (7782-50-5)	ASCC	1	3	-	-	-	-

As published in "Workplace Exposure Standards for Airborne Contaminants, December 2011" by SWA.

Biological Limits

None allocated for this product.

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Avoid generating and inhaling dusts. Use with local exhaust ventilation or while wearing appropriate respirator. Chlorine gas vapour is heavier than air - prevent concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected. Keep containers closed when not in use.

Personal protective equipment (PPE)

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods and environmental factors.

Eye/face protection

Face shield and safety glasses or goggles. See Australian Standards (AS/NZS 1336 & 1337).

Skin protection

Wear protective gloves and protective clothing appropriate for the risk of exposure. See Australian Standards (AS 2161 & 2919 and AS/NZS 2210). Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use. Wash and dry hands.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. See Australian Standards (AS/NZS 1715 & 1716).

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Form : Solid (Tablet) Colour : White
Odour:	Chlorine/Bromine
Odour Threshold:	No data available
pH:	3.4 – 3.6 @ 0.1% solution
Melting Point:	Not available
Decomposition Temperature:	Approx. > 140 °C
Evaporation Rate:	Not applicable
Flash Point:	Not applicable
Flammability Limits:	Not applicable
Specific Gravity:	Not available
Vapour Density (air=1):	Not available
Vapour Pressure:	Not applicable
% Volatiles:	Not applicable
Solubility in water:	1.50 g/L @ 20°C

10. STABILITY AND REACTIVITY

10.1 Reactivity

Reacts with acids liberating toxic gases. Reaction with hydrochloric acid will evolve chlorine gas. Form potentially explosive mixtures with oxidative cyanurates.

10.2 Chemical stability

Product is stable under normal conditions of use, storage and temperature. This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

10.3 Possibility of hazardous reactions

Mixing with any of the incompatible compounds listed below can initiate a hazardous decomposition. Reacts with ammonia, urea and amines (can form reactive and toxic chloramines).

10.4 Conditions to avoid

Avoid moisture, poor ventilation, contamination, excessive heat, sparks, open flames and other ignition sources

10.5 Incompatible materials

Acids, bases, reducing agents, oxidisable materials, ammonium, urea and related nitrogen compounds, combustible materials.

10.6 Hazardous decomposition products

Chlorine, bromine and oxides of chlorine, bromine and carbon.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - rat - 578 mg/kg

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Carcinogenicity

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans

Health Effects

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

- Eye contact :** This product is very corrosive to eyes. It will quickly cause severe pain, and corrosion of the eye and surrounding facial tissues. Unless exposure is immediately treated, permanent blindness and facial scarring will occur.
- Skin contact :** This product is corrosive to the skin. Capable of causing moderate to severe burns with ulceration. Can penetrate to deeper layers of skin, resulting in third degree burns. Corrosion will continue until product is removed or neutralised. Severity depends on concentration and duration of exposure. Burns may not be immediately painful; the onset of pain may be minutes to hours.
- Ingestion :** Significant oral exposure is considered to be unlikely. This product is likely to cause headache and gastric disturbance such as nausea and vomiting if ingested in significant quantities. This product is an oral irritant. Symptoms may include burning sensation and reddening of skin in mouth and throat. May cause chemical burns to the gastrointestinal tract if swallowed. Other symptoms may also become evident, but all should disappear once exposure has ceased.
- Inhalation :** Product is corrosive to the respiratory tract. Symptoms will include extreme pain in nose and throat and copious secretion of mucous in the nose and throat. Other symptoms such as pulmonary oedema may also become evident, and may be life threatening if exposure is other than brief.

11.2 Information on possible routes of exposure

The substance can be absorbed into the body by ingestion and by inhalation.

11.3 Additional Information

RTECS: NH3485000

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Avoid contaminating waterways.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Other adverse effects

Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Disposal methods and containers

Ensure waste disposal conforms to relevant local, state and federal authority waste disposal regulations. All empty packaging should be disposed of as unused product.

13.3 Special precautions for landfill or incineration

Contact a specialist disposal company or the local waste regulator for advice. Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an approved waste facility. Processing, use or contamination of this product may change the waste management options. Untreated waste calcium hypochlorite must never be discharged directly into sewers or surface water. Following decontamination, disposal of residue by secure landfill may be acceptable.

14. TRANSPORT INFORMATION

Classified as a DANGEROUS GOODS by the criteria of the ADG Code for transport by road or rail.

Classified as a DANGEROUS GOODS by the criteria of the IMDG Code for transport by sea

Classified as a DANGEROUS GOODS by the criteria of the IATA Code for transport by air

14.1 UN number	ADG : 1479	IMDG : 1479	IATA : 1479
14.2 Proper shipping name	ADG : OXIDISING SOLID, N.O.S. (BROMOCHLORODIMETHYLHYDANTOIN)		
	IMDG : OXIDISING SOLID, N.O.S. (BROMOCHLORODIMETHYLHYDANTOIN)		
	IATA : OXIDISING SOLID, N.O.S. (BROMOCHLORODIMETHYLHYDANTOIN)		
14.3 Transport hazard class	ADG : 5.1 Oxidising	IMDG : 5.1 Oxidising	IATA : 5.1 Oxidising
14.4 Packing group	ADG : II	IMDG : II	IATA : II
14.5 Environmental hazards	ADG : Yes	IMDG Marine Pollutant : Yes	IATA : Yes
14.6 Special precautions for users	No data		
14.7 Hazchem code	ADG : 1Y	IMDG EMS : F-A, S-B	
14.8 Dangerous goods initial emergency response guide (SAA/SNZ HB76:2010)	31		

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

Poisons Schedule : 6

Carcinogen classification under WHS Regulations 2011, Schedule 10

Not listed

Notification status

AICS On the inventory, or in compliance with the inventory.

16. OTHER INFORMATION

Key / legend to abbreviations and acronyms used in the MSDS

ADG	Australian Dangerous Goods
ASCC	Australian Safety and Compensation Council
DEC	Department of Environment and Conservation
NOHSC	National Occupational Health and Safety Commission
SUSDP	Standard for the Uniform Scheduling of Drugs and Poisons
Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Eye Dam.	Serious eye damage
Ox. Sol.	Oxidising solids
Skin Corr.	Skin corrosion
TWA	Time weighted average
STEL	Short term exposure level
SWA	Safe Work Australia
Peak Limitations	A ceiling concentration that should not be exceeded over a measurement period, which should be as short as possible, but not exceeding 15 minutes
LD ₅₀	Lethal dose 50. The single dose of a substance that causes the death of 50% of an animal population from exposure to the substance by any route other than inhalation
LC ₅₀	Lethal concentration that kills 50% of an animal population within a specified time
TD Lo	The lowest dose of a substance known to have produced signs of toxicity
RTECS	Registry of Toxic Effects of Chemical Substances
g/L	Grams per litre
g/cm ³	Grams per cubic centimetre
mg/m ³	Milligrams per cubic metre
mg/kg	Milligrams per kilogram
pH	Relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline
WHS	Work Health and Safety

Literature references

“Workplace Exposure Standards for Airborne Contaminants, December 2011” by SWA
Work Health and Safety Regulations 2011

Disclaimer

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