



Paramount Pools & Spas

a division of PoolQuip Limited

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If you have a Chemical Emergency phone 111 and ask for Fire
In case of Poisoning contact The National Poisons Centre on 0800 POISON (0800 764 766)
The most current version of this document is available online at www.poolquip.co.nz

MATERIAL SAFETY DATA SHEET (MSDS)

1.0 Product & Company Information

Revision Date: April 2011

Product Name: **Bromine**

Other Names: Spa Bromine, Bromine Pills, Bromine Tablets

Uses: Spa Pool and Swimming Pool Water Sanitization

Distributor Details: As per head on first page and any of our authorised retailers and distributors.

2.0 Hazard Data

Classified as Dangerous Goods according to NZS 5433:1999

Oxidizing Corrosive Dangerous For The Environment

Risk & Safety Phrases:

R8 Contact with combustible material may cause fire
R22 Harmful if swallowed
R31 Contact with acids liberates toxic gas
R34 Causes burns

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| R43 | May cause sensitisation by skin contact |
| S1/2 | Keep locked up and out of the reach of children |
| S26 | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice |
| S28 | After contact with skin wash with plenty of soap and water. |
| S36/37/39 | Wear protective clothing, gloves and eye/face protection. |
| S45 | In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). |

ERMA New Zealand Approval Code: HSR002632

HSNO Hazard Classification: 5.1.1B 6.1D 6.5B 8.2B 9.3A

3.0 Composition

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| Chemical Name: | 1-Bromo-3-chloro-5,5-dimethylhydantion |
| CAS Number: | 16079-88-2 |
| Percentage Rating: | > 98.00 |

4.0 First Aid Measures

Description of necessary measures according to routes of exposure.

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| Swallowed: | Rinse mouth with water. Give water to drink provided victim is conscious. DO NOT induce vomiting. Seek medical attention immediately. |
| Eyes: | Immediately flush eyes with plenty of water for 15 minutes holding eyelids open. Seek medical attention. |
| Skin: | Remove contaminated clothing. Wash affected area with plenty of soap and water for 15 minutes. Wash clothing before reuse. Seek medical attention immediately. |
| Inhaled: | Remove victim from exposure to fresh air. If not breathing, apply artificial respiration. If breathing is difficult, give oxygen. Do NOT use mouth to mouth resuscitation. Seek medical advice immediately. |
| Advice to Doctor: | Treat symptomatically based on individual reactions of patient and judgement of doctor. |
| Aggravated medical | May cause liver and kidney damage. Effects may be delayed. |

5.0 Fire Fighting Measures

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| Extinguishing Media | In case of fire, the ONLY appropriate extinguishing media is WATER. |
| Hazards from Combustion Products | Product is a strong oxidizer. Avoid generating dust. Contamination with moisture, organic matter, or other chemicals may start a chemical reaction with generation of heat, hazardous gas, and possible fire/explosion. Incompatible with strong oxidants reducing agents, combustible materials, water, acids (minerals, non-oxidizing/oxidizing, and organic), and ignition sources. When involved in a fire, this product may generate hydrogen chloride, nitrogen oxides, carbon monoxide, hydrogen bromide, or bromine, carbon dioxide, nitrogen and irritating/toxic fumes and gases. |
| Special Protective Precautions and Equipment for Fire Fighters | Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves). Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. |
| Flammability Conditions | Product is a non-flammable solid. |
| Hazchem Code | 2W |

6.0 Accidental Release Measures

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| Emergency Procedures | Personnel involved in the clean up should wear full protective clothing. Eliminate all sources of ignition. Increase ventilation. Avoid generating dust. Do not allow product to reach drains, sewers or waterways. If the product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management. |
| Methods and Materials for Containment and Clean Up | Contain and sweep/shovel up spills with dust binding material or use an industrial vacuum cleaner. Transfer to a suitable, labelled chemical waste container and dispose of promptly as hazardous waste. Once material pick up is complete, flush spill site with plenty of water to eliminate any residue. |

7.0 Handling & Storage

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| Precautions for Safe Handling | Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product dust/fumes. |
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| Conditions for Safe Storage (Including any compatibles) | Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials including strong oxidants, reducing agents, combustible materials, water, acids (mineral, non-oxidizing, oxidizing, and organic), and ignition sources. Protect from heat, sparks, flame, and moisture. This product has a UN classification of 3085 and a Dangerous Goods Class 5.1 (Oxidizing agent) and a Subsidiary Risk 8 (corrosive) according to The Australian Code for the Transport of Dangerous Goods By Road and Rail. |
| Container Type | Packaging must comply with requirements of Hazardous Substances (Packaging) Regulations 2001. |

8.0 Exposure Controls / Personal Protection

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| National Exposure Standards | No exposure standard has been established for this product by the Australian Safety and Compensation Council (ASCC). However, the exposure standard for dust not otherwise specified is 10mg/m ³ (for inspirable dust) and 3mg/m ³ (for respirable dust). |
| Biological Limit Values | No information available on biological limits for this product. |
| Engineering Controls | No exposure standard has been established for this product by the Australian Safety and Compensation Council (ASCC). However, the exposure standard for dust not otherwise specified is 10mg/m ³ (for inspirable dust) and 3mg/m ³ (for respirable dust). |
| Personal Protection | No exposure standard has been established for this product by the Australian Safety and Compensation Council (ASCC). However, the exposure standard for dust not otherwise specified is 10mg/m ³ (for inspirable dust) and 3mg/m ³ (for respirable dust). |

9.0 Physical and Chemical Properties

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| Appearance | 20g White Pills or White to Cream Powder or Crystalline Granules |
| Formula | C ₅ H ₆ BrC ₁ N ₂ O ₂ |
| Odour | Strong Halogen Odour, or faint odour of bromine |
| Vapour Pressure | Not Applicable |
| Vapour Density | Not applicable |
| Boiling Point | Not Available |
| Melting Point | Not Applicable |
| Solubility in Water | Not Applicable |
| Specific Gravity | Not Applicable |
| Flash Point | Not Applicable |
| pH | 2.88 |
| Rate of Solid Materials | Not Applicable |

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| Decomposition Temperature | 158 - 162 Deg C. |
| Additional Information | Molecular Weight: 241.5g/mol Active Bromine : 31-35% Active Chlorine : 13-17% |

10.0 Stability and Reactivity

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| Chemical Stability | Product is stable under normal conditions of use, storage and temperature. |
| Conditions to Avoid | Avoid excessive heat, sparks, flame, direct sunlight, static charges, generating dust, moisture, and high temperatures. |
| Incompatible Materials | Incompatible with strong oxidants, reducing agents, combustible materials, water, and ignition sources. |
| Hazardous Decomposition Products | When involved in a fire, this product may generate hydrogen chloride, nitrogen oxides, carbon monoxide, hydrogen bromide or bromine, carbon dioxide, nitrogen, irritating and highly toxic fumes and gases. |
| Hazardous Reactions | Hazardous Polymerization has not been reported. |

11.0 Toxicological Information

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| Toxicity Data | No toxicological information available for this product. |
| Health Effects – Acute | |
| Swallowed | Harmful if swallowed. This product is poisonous and may be fatal if swallowed. |
| Eye | Irritant to eyes. Corrosive to tissues. Direct contact causes severe eye irritation. Can cause irreversible eye damage. |
| Skin | Irritant to skin. Corrosive to tissues. Direct contact causes skin irritation. |
| Inhaled | Irritating to nose and throat. |

12.0 Ecological Information

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| Ecotoxicity | No data available |
| Persistence and Degradability | No information available on persistence/degradability for this product |
| Mobility | No information available on mobility for this product |

Environmental Fate (Exposure) DO NOT allow product to reach waterways, drains or sewers

Bioaccumulative Potential No information available on bioaccumulation for this product

13.0 Disposal Considerations

Disposal Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of at an approved facility.

Special Precautions for Land Fill or Incineration Dispose of in an incinerator or landfill approved for pesticide containers. Contact a specialist disposal company or the local waste regulator for advice.

14.0 Transport Information

Land and Sea Transport

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| UN Number | 3085 |
| Shipping Name | Oxidising Solid (Bromine) |
| Dangerous Goods Class | 5.1 AND 8 |
| Packing Group | II |
| Hazchem Code | 2W |

15.0 Regulatory Information

Classified as hazardous according to The Australian Safety and Compensation Council (ASCC) and Annex I European Directive 67/548/EEC. EINECS No: 231-908-7 Calcium Hypochlorite

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| Poisons Schedule | 6 |
| EPG | 31 |
| AICS Name | 2,4-IMIDAZOLIDINEDIONE,1-BROMO-3-CHLORO-5,5-DIMETHYL |
| NZ Toxic Substance | N |
| HSNO Hazard Classification | 5.1.1B 6.1D 6.5B 8.2B 8.3A |
| ERMA Approval Code | HSR002632 |

16.0 Other Information

None