SAFETY DATA SHEET
BIOCIDE BR

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product name BIOCIDE BR
Product number BC-BR
Synonyms; trade names Bromine release tablets., BCDMH.

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses Oxidising biocide / disinfectant

1.3. Details of the supplier of the safety data sheet
Supplier Feedwater Limited
Tarran Way
Tarran Estate
Moreton
Wirral
CH46 4TU
Tel: 0151 606 0808
msds@feedwater.co.uk

1.4. Emergency telephone number
National emergency telephone National Chemical Emergency Centre - 01865 407333 (UK Only)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification
Physical hazards Not Classified
Health hazards Acute Tox. 4 - H302 Acute Tox. 4 - H332 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 STOT SE 3 - H335
Environmental hazards Aquatic Acute 1 - H400

Classification (67/548/EEC or 1999/45/EC) Xn; R20/22. C; R34. R43. N; R50.

2.2. Label elements
Pictogram

Signal word Danger
BIOCIDE BR

Hazard statements
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.

Precautionary statements
P264 Wash contaminated 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.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352 IF ON SKIN: Wash with plenty of water.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.
Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep 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.
P312 Call a POISON CENTER/doctor if you feel unwell.
P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/container in accordance with national regulations.
P260 Do not breathe dust.
P401 Store in accordance with national regulations.

Supplemental label information
EUH031 Contact with acids liberates toxic gas.
RCH002b For professional users only.
RCH004b Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.
BPR001 Use biocides safely. Always read the label and product information before use.

Contains
Bromochloro-5,5-dimethylimidazolidine-2,4-dione (BCDMH), 1,3-Dichloro-5,5-dimethylhydantoin, 1,3-DICHLORO-5-ETHYL-5-METHYLMIDAZOLIDINE-2,4-DIONE

2.3. Other hazards
Not applicable.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Bromochloro-5,5-dimethylimidazolidine-2,4-dione (BCDMH) 60-100%
CAS number: 32718-18-6 EC number: 251-171-5
M factor (Acute) = 1

Classification
Acute Tox. 4 - H302
Skin Corr. 1B - H314
Eye Dam. 1 - H318
Skin Sens. 1 - H317
Aquatic Acute 1 - H400

Classification (67/548/EEC or 1999/45/EC)
Xn;R22. C;R34. N;R50. R31,R43.
SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Remove affected person from source of contamination. Keep affected person warm and at rest. Get medical attention immediately. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen.

Ingestion
Rinse mouth thoroughly with water. Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention. Show this Safety Data Sheet to the medical personnel. Obtain medical attention immediately to determine if vomiting or stomach pumping is necessary.

Skin contact
Remove affected person from source of contamination. Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact
Remove affected person from source of contamination. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation
Symptoms following overexposure to dust may include the following: Difficulty in breathing.

Ingestion
May cause chemical burns in mouth and throat. May cause discomfort if swallowed. May cause stomach pain or vomiting.

Skin contact
This product is corrosive.

Eye contact
This product is corrosive.
4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor: Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Extinguish with foam, carbon dioxide or dry powder.

Unsuitable extinguishing media: DO NOT USE dry extinguishers containing ammonium compounds.

5.2. Special hazards arising from the substance or mixture

Specific hazards: Thermal decomposition or combustion products may include the following substances: Very toxic or corrosive gases or vapours.

Hazardous combustion products: Heating may generate the following products: Toxic and corrosive gases or vapours. Fire creates: Bromine.

5.3. Advice for firefighters

Protective actions during firefighting: No specific firefighting precautions known. Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapours.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions: Avoid or minimise the creation of any environmental contamination. Observe all national regulations. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Do not touch or walk into spilled material. Avoid generation and spreading of dust. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. Do not use sawdust or other combustible material. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. If tablets are dry and uncontaminated, transfer back into the original container, and if acceptable use as intended.

6.4. Reference to other sections

Reference to other sections: Collect and dispose of spillage as indicated in Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions: Avoid spilling. Avoid contact with skin and eyes. Observe any occupational exposure limits for the product or ingredients. Avoid inhalation of dust. Do not eat, drink or smoke when using the product. Good personal hygiene procedures should be implemented. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Avoid contact with the following materials: Acids. Moisture.
BIOCIDES BR

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place. Keep only in the original container. Do not store damp or contaminated tablets.

Storage class Corrosive storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

Usage description Use as directed by supplier

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

1,3-Dichloro-5,5-dimethylhydantoin

Long-term exposure limit (8-hour TWA): WEL 0.2 mg/m³
Short-term exposure limit (15-minute): WEL 0.4 mg/m³

WEL = Workplace Exposure Limit

Ingredient comments WEL = Workplace Exposure Limits

8.2. Exposure controls

Protective equipment

Appropriate engineering controls Provide adequate ventilation. Avoid inhalation of dust. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection Wear eye protection. The following protection should be worn: Dust-resistant, chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection To protect hands from chemicals, gloves should comply with European Standard EN374. Wear protective gloves made of the following material: Nitrile rubber. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected.

Other skin and body protection Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene measures Provide eyewash station and safety shower. Do not smoke in work area. Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes contaminated.

Respiratory protection No specific recommendations. Protection against nuisance dust must be used when the airborne concentration exceeds 10 mg/m³. If ventilation is inadequate, suitable respiratory protection must be worn.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance Tablets

Colour White/off-white.
BIOCIDE BR

Odour

pH
pH (concentrated solution): 3.5

Melting point
Sublimes at 120-148°C

Solubility(ies)
Soluble in water. 5.4 g/l water @ 25°C

Partition coefficient
Not known.

9.2. Other information
Not available.

SECTION 10: Stability and reactivity

10.1. Reactivity
Generates toxic gas in contact with acid.

10.2. Chemical stability
Stable at normal ambient temperatures.

10.3. Possibility of hazardous reactions
Reacts with some metals Undiluted product reacts exothermically with strong reducing agents. Reacts with acids to form bromine gas.

10.4. Conditions to avoid
Avoid exposure to high temperatures or direct sunlight.

10.5. Incompatible materials

10.6. Hazardous decomposition products
When water is added, the product reacts with a number of metals forming hydrogen gas, which may form explosive vapour/air mixtures. Heating may generate the following products: Carbon monoxide (CO). Oxides of nitrogen. Hydrogen chloride (HCl). Isocyanates. Thermal decomposition or combustion products may include the following substances: Corrosive gases or vapours. Bromine.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral
Acute toxicity oral (LD₅₀ mg/kg)
441.0

Species
Rat

ATE oral (mg/kg)
441.0

Acute toxicity - inhalation
ATE inhalation (gases ppm)
6,363.63636364

ATE inhalation (vapours mg/l)
27.27272727

ATE inhalation (dusts/mists mg/l)
4.54545455

Skin corrosion/irritation
BIOCIDEBR

**Animal data**
Corrosive.

**Carcinogenicity**
No evidence of carcinogenic effects.

**Inhalation**
Dust is severely irritating to the upper respiratory system.

**Ingestion**
May cause burns in mucous membranes, throat, oesophagus and stomach.

**Skin contact**
May cause serious chemical burns to the skin.

**Eye contact**
Causes burns.

**Toxicological information on ingredients.**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Acute toxicity - oral</th>
<th>Species</th>
<th>ATE oral (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromochloro-5,5-dimethylimidazolidine-2,4-dione (BCDMH)</td>
<td>Acute toxicity oral (LD₅₀ mg/kg) 485.0</td>
<td>Rat</td>
<td>485.0</td>
</tr>
<tr>
<td>1,3-Dichloro-5,5-dimethylhydantoin</td>
<td>Acute toxicity oral (LD₅₀ mg/kg) 618.0</td>
<td>Rat</td>
<td>618.0</td>
</tr>
</tbody>
</table>

**SECTION 12: Ecological Information**

**Ecotoxicity**
The product contains substances which are toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

**12.1. Toxicity**
Toxic to aquatic organisms

**Acute toxicity - aquatic invertebrates**
EC₅₀, 48 hours: 0.19 mg/l, Daphnia magna

**Acute toxicity - aquatic plants**
EC₅₀, 72 hours: 0.93 mg/l, Desmodesmus subspicatus

**Ecological information on ingredients.**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Acute toxicity - aquatic invertebrates</th>
<th>Acute toxicity - aquatic plants</th>
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<tr>
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<td>EC₅₀, 48 hours: 0.19 mg/l, Daphnia magna</td>
<td>EC₅₀, 72 hours: 0.93 mg/l, Desmodesmus subspicatus</td>
</tr>
</tbody>
</table>
BIOCIDE BR

Acute aquatic toxicity
LE(C)₅₀ 0.1 < L(E)C50 ≤ 1
M factor (Acute) 1

Acute toxicity - fish LC₅₀, 96 hours: 0.65 mg/l, Onchorhynchus mykiss (Rainbow trout)
Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 0.87 mg/l, Daphnia magna
Acute toxicity - aquatic plants EC₅₀, 72 hours: 2 mg/l, Desmodesmus subspicatus
Acute toxicity - microorganisms EC₅₀, 3 hours: 20 mg/l, Activated sludge

1,3-DICHLORO-5-ETHYL-5-METHYLIMIDAZOLIDINE-2,4-DIONE

Acute aquatic toxicity
LE(C)₅₀ 0.1 < L(E)C50 ≤ 1
M factor (Acute) 1

12.2. Persistence and degradability
Persistence and degradability No data available.

12.3. Bioaccumulative potential
Bioaccumulative potential No data available on bioaccumulation.
Partition coefficient Not known.

12.4. Mobility in soil
Mobility The product is soluble in water.

12.5. Results of PBT and vPvB assessment
Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects
Other adverse effects Not known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
General information Waste is classified as hazardous waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

14.1. UN number
UN No. (ADR/RID) 3085
UN No. (IMDG) 3085
UN No. (ICAO) 3085
BIOCIDE BR

UN No. (ADN) 3085

14.2. UN proper shipping name

Proper shipping name (ADR/RID) OXIDIZING SOLID, CORROSIVE, N.O.S. (Contains Bromochloro-5,5-dimethylimidazolidine-2,4-dione (BCDMH))

Proper shipping name (IMDG) OXIDIZING SOLID, CORROSIVE, N.O.S. (Contains Bromochloro-5,5-dimethylimidazolidine-2,4-dione (BCDMH))

Proper shipping name (ICAO) OXIDIZING SOLID, CORROSIVE, N.O.S. (Contains Bromochloro-5,5-dimethylimidazolidine-2,4-dione (BCDMH))

Proper shipping name (ADN) OXIDIZING SOLID, CORROSIVE, N.O.S. (Contains Bromochloro-5,5-dimethylimidazolidine-2,4-dione (BCDMH))

14.3. Transport hazard class(es)

ADR/RID class 5.1
ADR/RID subsidiary risk 8
ADR/RID classification code OC2
ADR/RID label 5.1
IMDG class 5.1
IMDG subsidiary risk 8
ICAO class/division 5.1
ICAO subsidiary risk 8
ADN class 5.1
ADN subsidiary risk 8

Transport labels

14.4. Packing group

ADR/RID packing group III
IMDG packing group III
ADN packing group III
ICAO packing group III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

14.6. Special precautions for user

EmS F-A, S-Q
ADR transport category 3
Emergency Action Code 1W
BIOCIDE BR

Hazard Identification Number  58
(ADR/RID)

Tunnel restriction code  (E)

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU legislation

Guidance
Workplace Exposure Limits EH40.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

General information
Only trained personnel should use this material. Further details may be available from the supplier.

Key literature references and sources for data
REACH registered substances database Other safety data sheets relevant to individual chemical constituents within this product.

Revision date
01/06/2015

Revision
11

Supersedes date
01/04/2013

SDS status
Approved.

Risk phrases in full
R20/22 Harmful by inhalation and if swallowed.
R22 Harmful if swallowed.
R23 Toxic by inhalation.
R31 Contact with acids liberates toxic gas.
R34 Causes burns.
R43 May cause sensitisation by skin contact.
R50 Very toxic to aquatic organisms.
R8 Contact with combustible material may cause fire.
Hazard statements in full

H271 May cause fire or explosion; strong oxidiser.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.