



SAFETY DATA SHEET

SPA Frog Bromine Cartridge – EC

This Safety Data Sheet contains information concerning the potential risks to those involved in handling, transporting and working with the material, as well as describing potential risks to the consumer and the environment. This information must be made available to those who may come into contact with the material or are responsible for the use of the material. This Safety Data Sheet is prepared in accordance with formatting described in the Regulation (EU) No 453/2010, and described in CLP Regulation (EC) No 1272/2008 and subsequent amendments.

Section 1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name: SPA Frog Bromine Cartridge
Chemical Name: 1-bromo-3-chloro-5,5-dimethylhydantoin
CAS Number: 32718-18-6
EINECS Number: 251-171-5

1.2 Relevant identified uses of the substances or mixture and uses advised against

Only for use in the treatment of water used in spas, hot tubs and other venues meant for human bathing.

1.3 Details of the supplier of the safety data sheet

European Contact:

Link Ideas & Factories
Z.I. Courtine
195 Rue Pierre Paraf
84000 Avignon FR

+33 490 252055

Manufacturer:

King Technology Inc,
530 11th Avenue South,
Hopkins,
MN 55343
USA.

+1 952 933 6118

1.4 Emergency telephone number

Emergency telephone number: Chemtrec: +1 703 527 3887 (Operational 24 hours a day).



SAFETY DATA SHEET

SPA Frog Bromine Cartridge – EC

Section 2. Hazards Identification

SUBSTANCE:

2.1 Classification of the substance

Classification according to Regulation (EC) No. 1272/2008.	Acute Tox 4, Skin Corr. 1B, Aquatic Acute 1, H302, H314 and H400.
Classification according to Directive 67/548/EEC:	C, N, R22, R34 and R50.

Physicochemical hazards: Based on the transport classification assigned to this substance, it may have oxidising properties.

Human health hazards: Causes burns to the skin and eye when direct contact with the substance occurs.

Environment hazards: Causes toxicity to aquatic organisms.

Please see Section 16 for full text of each classification.

2.2 Label elements

Regulation (EC) No 1272/2008:



Signal word

Danger

Hazard Statements

H302:	Harmful if swallowed
H314:	Causes severe skin burns and eye damage.
H400:	Very toxic to aquatic life.

Precautionary statements:

P280:	Wear protective gloves/protective clothing/eye protection/face protection.
P273:	Avoid release to the environment.
P301+P330+P331:	If swallowed: Rinse mouth. Do not induce vomiting.
P305+P351+P338:	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P391:	Collect spillage.
P405:	Store locked up.



SAFETY DATA SHEET

SPA Frog Bromine Cartridge – EC

2.3 Other hazards

No additional information

PBT / vPvB:	Not expected to be PBT/vPvB
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Section 3. Composition/Information on ingredients.

Name	CAS Number	EINECS Number	% Composition	Classification according to Directive 67/548/EEC	Classification according to Regulation (EC) No. 1272/2008
1-bromo-3-chloro-5,5-dimethylhydantoin	32718-18-6	251-171-5	93 – 99%	C N R22 R34 R50.	Acute Tox 4 Skin Corr. 1B Aquatic Acute 1 H302 H314 H400.

Section 4. First Aid Measures

4.1 Description of first aid measures

Inhalation

Remove victim to fresh air. Keep victim warm and at rest, preferably in a comfortable upright sitting position. Seek immediate medical attention.

Skin contact

Take off all contaminated clothing. Immediately flush the skin immediately with plenty of water. Seek medical attention if irritation persists after washing.

Accidental eye contact

Flush eyes with water thoroughly and continuously for at least 15 minutes. Keep eyes wide open while rinsing. Protect unharmed eye. If there are signs of irritation or other symptoms, seek medical attention.

Ingestion

Do not induce vomiting. Clean mouth with water and drink plenty of water afterwards. Do not give anything by mouth to an unconscious person. Seek medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

Possible skin burn may occur following contact with the skin.

4.3 Indication of any immediate medical attention and special treatment needed

Please refer to the recommendations provided in Section 4.1.



SAFETY DATA SHEET

SPA Frog Bromine Cartridge – EC

Section 5. Firefighting Measures

5.1 Extinguishing media

Use appropriate extinguishing media, including water spray, fog or mist or alcohol resistant foam. Do not use CO₂ or dry chemicals.

5.2 Special hazards arising from the substance or mixture

Fire may cause the formation of toxic gases. On combustion, hazardous products may include toxic gases/vapours/fumes of bromine or chlorine and oxides of carbon or nitrogen.

5.3 Advice for fire-fighters

Wear self-contained breathing apparatus.

Section 6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Wash thoroughly after dealing with a spillage.

6.2 Environmental precautions

Provide ventilation and confine spill. Do not allow runoff to sewers.

6.3 Methods and material for containment and cleaning up

Collect any spilled material and reclaim or dispose of in sealed containers in licensed waste. Avoid generation and spreading of dust. Avoid contact with water while the product is in storage. If the product is released prior to use, it should be recovered dry prior to the use of water in the final clean up.

6.4 Reference to other sections

Refer to section 8 and/or Section 13 of SDS for personal protection details.

Section 7. Handling and Storage

7.1 Precautions for safe handling

Avoid handling product in a way that dust may be formed. If air contamination is above accepted levels, use an approved respirator. Do not use in a confined space without adequate ventilation and/or respirator. Avoid spillages and any contact with the skin or eyes.



SAFETY DATA SHEET

SPA Frog Bromine Cartridge – EC

7.2 Condition for safe storage, including any incompatibilities

Keep in original container. Keep container closed when not in use. Keep in a cool, dry, ventilated storage place. Protect from light, including direct sun rays. Avoid contact with any acids and combustible materials.

7.3 Specific end use(s)

The product is only for use in spas and hot tubs.

Section 8. Exposure Controls/Personal Protection

8.1 Control parameters

Workers:

No DNEL's or DMEL's have been derived for this substance.

No known Operational Exposure Levels exist for this substance.

8.2 Exposure controls

Appropriate Engineering Controls

Use appropriate engineering controls in the form of adequate ventilation to reduce air contamination to permissible exposure levels in the event that dust particles may migrate to the grooves and divots of the cartridge moulding during setting of the cartridge to the required setting.

Respiratory protection

All handling operations should take place in well ventilated areas, with the use of specific dust masks if required in non-ventilated areas in the event that dust particles may migrate to the grooves and divots of the cartridge moulding.

Hand protection

Suitable gloves should be worn. Suitable gloves to provide short-term protection from splashes include those made from rubber, neoprene or PVC. Gloves should be discarded and replaced if signs of degradation are observed.

Eye protection

Wear approved safety goggles or face shield.

Skin protection

Wear appropriate protective clothing (overalls) to prevent any possibility of skin contact.

Thermal Hazards

No information provided.

Environmental Exposure Controls

No additional information provided.

Section 9. Physical and Chemical Properties



SAFETY DATA SHEET

SPA Frog Bromine Cartridge – EC

9.1 Information on basic physical and chemical properties

Appearance:	Off-white granular solid.
Odour:	Slight odour
pH:	3.5 (diluted solution)
Melting point/freezing point °C:	145 – 160°C
Flammability:	Not flammable
Explosivity:	Not explosive
Density:	0.96
Bulk density:	0.9 kg/L
Solubility:	Slightly soluble in water (0.15 g/100g H ₂ O at 20°C)
Partition Coefficient: n-octanol/water:	0.35
Oxidising:	Expected to have oxidising properties

9.2 Other information

No additional information.

Section 10. Stability and Reactivity

10.1 Reactivity

Stable under normal conditions of use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Will not polymerize.

10.4 Conditions to avoid

Avoid contact with oxidisers or reducing agents, acids or alkalis. Avoid contact with moisture during storage.

10.5 Incompatible materials

No additional information provided.

10.6 Hazardous decomposition products

Toxic gases, vapours or fumes of hydrogen bromide, bromine, hydrogen chloride and chlorine. Oxides of carbon and nitrogen may also be formed.

Section 11. Toxicological Information

11.1 Information on toxicological effects

Acute Oral Toxicity:

Following oral administration of the substance to rats, the LD₅₀ was determined to be 578 mg/kg.

Acute Dermal Toxicity:

Following dermal application of the substance to the skin of rabbits, the LD₅₀ was determined to be >2000mg/kg.



SAFETY DATA SHEET

SPA Frog Bromine Cartridge – EC

Skin Corrosion/Irritation:

The substance is expected to cause burns.

Serious eye damage/irritation:

The substance is expected to cause burns.

Carcinogenicity:

Not expected to be carcinogenic.

Germ cell Mutagenicity:

A reverse bacterial mutagenicity study (Ames test) indicated negative results, meaning the substance is not mutagenic.

Route of exposure:

The expected route of exposure is *via* the dermal route.

Symptoms related to the physical, chemical and toxicological characteristics:

Following exposure to SPA Frog Bromine Cartridge, burns to the eyes and skin may result. If SPA Frog Bromine Cartridge is ingested, damage may be caused to internal organs.

Section 12. Ecological Information

12.1 Toxicity

Acute Toxicity:

Aquatic toxicity	Effect dose	Exposure time	Species	Evaluation
Acute toxic effects	Not documented	96 hours	Fish	LC ₅₀ of 0.87 mg/L.
Acute toxic effects	Not documented	48 hours	<i>Daphnia magna</i>	EC ₅₀ of 0.46 mg/L
Acute toxic effects	Not documented	96 hours	American oyster	LC ₅₀ > 640 mg/L

12.2 Persistence and degradability

Degradable by hydrolysis.

12.3 Bioaccumulative potential

Expected to be of low bioaccumulative potential.

12.4 Mobility in soil

No information provided.

12.5 Results of PBT and vPvB assessment

Since the substance is regulated under Directive 98/8/EC, there is no PBT and vPvB assessment presented in the same format as per the REACH Regulation

12.6 Other adverse effects

Not applicable.



SAFETY DATA SHEET

SPA Frog Bromine Cartridge – EC

Section 13. Disposal Considerations

13.1 Waste treatment methods

Disposal operations – Rinse thoroughly before discarding in refuse.

Disposal of packaging – Do not reuse empty containers.

Please follow all local, regional, national and international laws.

Section 14. Transport Information

14.1 UN number

UN3085

14.2 UN proper shipping name

Oxidising Solid, Corrosive, N.O.S.

14.3 Transport hazard class(es)

5.1+8

14.4 Packing group

III

14.5 Environmental hazards

Yes

14.6 Special precautions for user

No additional information

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

No additional information provided.

Section 15. Regulatory Information

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

No information provided.

15.2 Chemical safety assessment

Not applicable as substance is being regulated in accordance with Directive 98/8/EC.

15.3 Use Biocides safely



SAFETY DATA SHEET

SPA Frog Bromine Cartridge – EC

Section 16. Other Information

Other information

This safety data sheet is prepared in accordance with Regulation (EU) No 453/2010.

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

Details of change from previous version:

- Reformatted to comply with Regulation (EU) No. 453/2010.

List of definitions:

CAS number: Chemical Abstracts Service Registry number

EEC: European Economic Community

EC: European Commission/Community

EC₅₀: Half maximal effective concentration.

EINECS: European Inventory of Existing Commercial Chemical Substances.

LC₅₀: Lethal Concentration at which 50% of the population tested died.

PBT: Persistent Bioaccumulative Toxic

SDS: Safety Data Sheet

vPvB: very Persistent very Bioaccumulative.