



SAFETY DATA SHEET SmartChlor

According to Appendix D, OSHA Hazard Communication Standard 29 CFR § 1910.1200.

1. Identification

Product identifier

Product name SmartChlor
Chemical name 1,3-dichloro-5,5-dimethylhydantoin
Synonyms; trade names FROG @ease SmartChlor® Cartridge
EPA Registration Number 53735-14

Recommended use of the chemical and restrictions on use

Application For use as a spa and hot tub disinfectant/sanitizer. Not intended for direct application to humans or animals.
Uses advised against Use only for intended applications.

Details of the supplier of the safety data sheet

Supplier King Technology, Inc.
6000 Clearwater Dr
Minnetonka, MN 55343
United States
1+ (952) 933-6118
sdsinfo@kingtechnology.com

Emergency telephone number

Emergency telephone CHEMTREC 800-424-9300 (24 hours)

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards Ox. Sol. 2 - H272
Health hazards Acute Tox. 4 - H302 Acute Tox. 4 - H332 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 STOT SE 3 - H335
Environmental hazards Aquatic Acute 1 - H400

Label elements

Hazard symbols



Signal word

Danger

SmartChlor

Hazard statements

H272 May intensify fire; oxidizer.
H302+H332 Harmful if swallowed or if inhaled.
H314 Causes severe skin burns and eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.

Precautionary statements

P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.
P220 Keep away from combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P260 Do not breathe dust.
P261 Avoid breathing dust.
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 must not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 In case of inadequate ventilation wear respiratory protection.
P301+P312 If swallowed: Call a poison center/ doctor if you feel unwell.
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.
P310 Immediately call a poison center/ doctor.
P321 Specific treatment (see medical advice on this label).
P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.
P342+P311 If experiencing respiratory symptoms: Call a poison center/ doctor.
P362+P364 Take off contaminated clothing and wash it before reuse.
P363 Wash contaminated clothing before reuse.
P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.
P391 Collect spillage.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/ container in accordance with national regulations.

Contains

1,3-Dichloro-5,5-dimethylhydantoin, 1,3-dichloro-5-ethyl-5-methylimidazolidine-2,4-dione

SmartChlor

3. Composition/information on ingredients

Mixtures

1,3-dichloro-5,5-dimethylhydantoin CAS number: 118-52-5	80 - 90%
Classification Ox. Sol. 2 - H272 Acute Tox. 4 - H302 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 STOT SE 3 - H335	
1,3-dichloro-5-ethyl-5-methylimidazolidine-2,4-dione CAS number: 89415-87-2 M factor (Acute) = 1	10 - 20%
Classification Ox. Sol. 1 - H271 Acute Tox. 4 - H302 Acute Tox. 3 - H331 Skin Corr. 1B - H314 Skin Sens. 1 - H317 Aquatic Acute 1 - H400	

The full text for all hazard statements is displayed in Section 16.

4. First-aid measures

Description of first aid measures

General information	Corrosive. Causes irreversible eye damage and skin burns. Harmful if swallowed.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. For breathing difficulties, oxygen may be necessary. Get medical attention immediately.
Ingestion	Get medical attention immediately. Do not induce vomiting unless under the direction of medical personnel. Give plenty of water to drink. Never give anything by mouth to an unconscious person.
Skin Contact	After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Continue to rinse for at least 15 minutes and get medical attention.
Eye contact	Rinse immediately with plenty of water for 15 minutes, lifting lower and upper lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Most important symptoms and effects, both acute and delayed

General information	Causes severe skin burns and eye damage. May cause respiratory irritation. May cause sensitisation by inhalation. May cause sensitisation by skin contact. Harmful if swallowed. Harmful if inhaled. Harmful in contact with skin.
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SmartChlor

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media In case of fire or smoke, call the fire department. Flood with copious amounts of water. Do not attempt to extinguish the fire with out a self-contained breathing apparatus (SCBA). Do not let the fire burn.

Unsuitable extinguishing media DO NOT use ABC or other dry chemical extinguishers since there is the potential for violent reaction.

Special hazards arising from the substance or mixture

Specific hazards in large fires fueled by other materials, this product may smolder for prolonged periods emitting a dense black smoke. Any spilled material should be considered contaminated. Neutralize to a non-oxidizing material for safe disposal. Materials which appears undamaged except for being damp on the outside should be opened and inspected immediately. If the material is damp, it should be neutralized to a non-oxidizing material for safe disposal.

Hazardous combustion products Harmful gases or vapors. Hydrogen bromide (HBr). Hydrogen chloride (HCl). Bromine. Chlorine.

Advice for firefighters

Protective actions during firefighting Ammonium phosphate (ABC) fire extinguishers should NOT be used.

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

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing, gloves, eye and face protection.

Environmental precautions

Environmental precautions Avoid the spillage or runoff entering drains, sewers or watercourses.

Methods and material for containment and cleaning up

Methods for cleaning up DO NOT ADD WATER to spilled material. DO NOT use floor sweeping compounds to clean up spills. Using clean dedicated equipment, sweep and scoop all spilled material, contaminated soil and other contaminated material and place into clean dry containers for disposal. Do not close containers containing wet or damp material. They should be left open to disperse any hazardous gases that may form. DO not transport wet or damp material.

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions Wear protective clothing as described in Section 8 of this safety data sheet. STRONG OXIDIZING AGENT. Do not mix with other chemicals. Never add water to the product. Always add this product to large quantities of water. Use clean dry utensils. Do not add this product to any dispensing device containing remnants of any other product. Such use may cause a violent reaction leading to fire or explosion. Contamination with moisture, organic matter or other chemicals will start a chemical reaction and generate heat, hazardous gas, possible fire and explosion. in case of contamination or decomposition, do not reseal container. If possible, isolate container in open air or well ventilated area.

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Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Do not eat, drink or smoke when using this product. Wash after use and before eating, smoking and using the toilet. Wash contaminated skin thoroughly after handling. Eye wash facilities and emergency shower must be available when handling this product. Persons susceptible to allergic reactions should not handle this product. Persons with impaired lung function should not handle this product.. Remove contaminated clothing and wash the skin thoroughly with soap and water after work.

Conditions for safe storage, including any incompatibilities

Storage precautions

Store in tightly-closed, original container in a dry, cool and well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not store near food, foodstuffs, drugs or potable water supplies.

Maximum Storage Temperature

125 F (52 C)

Specific end uses(s)

Specific end use(s)

For use as a spa and hot tub disinfectant/sanitizer. Not intended for direct application to humans or animals.

8. Exposure controls/Personal protection

Control parameters

Occupational exposure limits

1,3-dichloro-5,5-dimethylhydantoin

Long-term exposure limit (8-hour TWA): ACGIH 0.2 mg/m³

Short-term exposure limit (15-minute): ACGIH 0.4 mg/m³

Long-term exposure limit (8-hour TWA): OSHA 0.2 mg/m³

ACGIH = American Conference of Governmental Industrial Hygienists.

OSHA = Occupational Safety and Health Administration.

1,3-dichloro-5,5-dimethylhydantoin (CAS: 118-52-5)

Immediate danger to life and health 5 mg/m³

Exposure controls

Appropriate engineering controls

All handling should only take place in well-ventilated areas. As this product contains ingredients with exposure limits, process enclosures, local exhaust ventilation or other engineering controls should be used to keep worker exposure below any statutory or recommended limits, if use generates dust, fumes, gas, vapor or mist.

Eye/face protection

Wear goggles or safety glasses with side shields when handling this product.

Hand protection

Avoid skin contact. Wear rubber gloves when handling this product.

Other skin and body protection

Avoid contact with skin. Wear rubber gloves when handling this product.

Hygiene measures

Take off contaminated clothing and wash it before reuse.

Respiratory protection

Avoid breathing dust. Avoid breathing gas.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Granules.

Color

Off-white.

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Odor	Chlorine.
Odor threshold	No information available.
pH	(1% slurry at 25 C) = 3.4
Melting point	range: 106 - 130 C
Initial boiling point and range	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	The product is not combustible but in a fire may release oxygen, which can increase the burning rate of flammable materials.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapor pressure	No information available.
Vapor density	No information available.
Relative density	No information available.
Bulk density	No information available.
Solubility(ies)	0.43 g/100 g water @ 25°C
Partition coefficient	No data available.
Auto-ignition temperature	No information available.
Decomposition Temperature	180°C
Viscosity	No information available.

10. Stability and reactivity

Reactivity	Contact with water/moisture causes exothermic reaction or decomposition. May cause or intensify fire; oxidizer.
Stability	Stable at normal ambient temperatures and when used as recommended.
Possibility of hazardous reactions	Hazardous polymerization will not occur. Contact with water liberates toxic gas. Always dilute by carefully pouring the product into water. Reacts with incompatible materials.
Conditions to avoid	Do not store near heat sources or expose to high temperatures. Do not use in confined spaces without adequate ventilation and/or respirator. Avoid contact with water or moisture until ready for use. Avoid contact with contaminated tools and objects.
Materials to avoid	Avoid contact with water or concentrated organic material in the container. Avoid contact with all other chemicals. Particularly avoid contact with easily oxidizable material: ammonia, urea, or similar nitrogen containing compounds; inorganic reducing compounds; floor sweeping compounds; calcium hypochlorite, bleach; other swimming pool/spa chemicals in their concentrated form; alkalis.

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Hazardous decomposition products Hydrogen bromide (HBr). Hydrogen chloride (HCl). Bromine. Chlorine.

11. Toxicological information

Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg) 514.4

Acute toxicity - inhalation

ATE inhalation (vapours mg/l) 18.63

Skin corrosion/irritation

Skin corrosion/irritation Causes burns.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye damage.

Respiratory sensitization

Respiratory sensitization May cause sensitization or allergic reactions in sensitive individuals. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization

Skin sensitization May cause sensitization or allergic reactions in sensitive individuals. May cause an allergic skin reaction.

Germ cell mutagenicity

Summary Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

IARC carcinogenicity

Not listed.

NTP carcinogenicity

Not listed.

OSHA Carcinogenicity

Not listed.

Reproductive toxicity

Summary Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

Summary Based on available data the classification criteria are not met.

Aspiration hazard

Summary Based on available data the classification criteria are not met.

12. Ecological information

Acute aquatic toxicity

Acute toxicity - fish LC50 - Oncorhynchus mykiss (rainbow trout) - 0.58 mg/l - 96 h
Remarks: (HSDB)

Acute toxicity - aquatic invertebrates EC50 - Daphnia magna (Water flea) - 0.47 mg/l - 48 h
Remarks: (HSDB)

Chronic aquatic toxicity

Summary No data available.

Persistence and degradability

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Persistence and degradability Product ultimately hydrolyzes to dimethylhydantoin (DMH) and ethylmethyl hydantoin (MEH). Performance results from an actual operating sewage waste treatment plant demonstrate that both DMH and MEH are biodegradable compounds.

Bioaccumulative potential

Bio-Accumulative Potential No data available.

Partition coefficient No data available.

Mobility in soil

Mobility No data available.

13. Disposal considerations

Waste treatment methods

Disposal methods Use or reuse if possible. Pesticide wastes are toxic. Improper disposal of excess pesticide or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, Contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance. Do not contaminate water, food, or feed by storage or disposal or cleaning of equipment. Do not put product, spilled product, or filled or partially filled containers into the trash or waste compactor. Contact with incompatible materials could cause a reaction or fire. 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 of hazardous waste.
Do not reuse container. Rinse thoroughly before discarding in trash.

14. Transport information

General As supplied, this product is consigned under the Limited Quantities provisions.

15. Regulatory information

Regulatory Status This product is a US EPA FIFRA registered pesticide (EPA Reg. No.: 53735-14) and is subject to certain labeling requirements under federal pesticide law. These requirements may differ from the classification criteria and hazard information required for an OSHA GHS SDS. The following is the hazard information as required on the FIFRA label: DANGER Corrosive. Causes irreversible eye and skin damage. May be fatal if swallowed. Irritating to nose and throat. Avoid breathing dust and fumes. Do not get in eyes, on skin or on clothing. Wear goggles or safety glasses and rubber gloves when handling product. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

Not listed.

Massachusetts "Right To Know" List

118-52-5

Rhode Island "Right To Know" List

118-52-5

New Jersey "Right To Know" List

118-52-5

SmartChlor

Pennsylvania "Right To Know" List

118-52-5

Inventories

US - TSCA

All the ingredients are listed or exempt.

US - TSCA 12(b) Export Notification

Not applicable.

16. Other information

Revision date	10/24/2022
Revision number	03
SDS No.	4834
Hazard statements in full	H271 May cause fire or explosion; strong oxidizer. H272 May intensify fire; oxidizer. H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H331 Toxic if inhaled. H332 Harmful if inhaled. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. H400 Very toxic to aquatic life.

The information provided on the SDS is correct to the best of our knowledge, information, and belief at the date of this publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal, and release, and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.