

# MATERIAL SAFETY DATA SHEET

Product  
MSDS code: AS

Aqua Shield  
Version: 2

Date: 12 July 2018

## 1. Identification of the substance & the company

**Chemical family** Halogenated hydantoin  
**Molecular weight** 241.5  
**Type of product and use** Used to control IRB,SRB & other nuisance bacteria in groundwater water wells and bores. Algae in lakes and ponds

## 2. Hazards identification (\*)

**Important hazards** Oxidizer  
**Adverse human health effects** Causes burns. Aqua Shield may cause skin sensitization.  
**NFPA Ratings (Scale 0-4) (\*)** Health = 3, Fire = 0, Reactivity = 1

## 3. First-aid measures

**Eye contact** Holding the eyelids apart flush eyes promptly with copious flowing water for at least 20 minutes.  
Get medical attention immediately.

**Skin contact** Remove contaminated clothing. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes.  
Wash clothing before re-use. Get medical attention immediately.

**Inhalation** In case of dust inhalation or breathing fumes released from heated material, Remove person to fresh air. Keep him quiet and warm.  
Apply artificial respiration if necessary and get medical attention immediately.

**Ingestion** If swallowed, wash mouth thoroughly with plenty of water and give water to drink. Get medical attention immediately.  
\*\*\*\*\*  
NOTE: Never give an unconscious person anything to drink.  
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**Note to the physician** No specific antidote.  
Treat symptomatically and supportively.  
In case of ingestion do not induce vomiting.

## 4. Fire - fighting measures

**Flash point** None  
**Flammable/Explosion limits** Not flammable  
**Auto-ignition temperature** Not applicable  
**Extinguishing media** Dry powder, carbon dioxide or water spray  
**Fire fighting procedure** Cool containers with water spray. In closed stores, provide fire fighters with self-contained breathing apparatus in positive pressure mode.

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**Unusual fire and explosion hazards** When heated to decomposition, may release poisonous and corrosive fumes of HBr, NO<sub>x</sub> and HCl. Strong oxidizing agent. Forms explosive mixtures with combustible, organic or other easily oxidizable materials.

## 5. Accidental release measures

**Personal precautions** Evacuate area  
Use dust respirator, rubber gloves and chemical safety goggles.

**After spillage / leakage** Sweep up, place in a suitable container and hold for waste disposal. Avoid raising dust.  
Ventilate area and wash spill site after material pickup is complete.  
Avoid access to streams, lakes or ponds.

## 6. Handling and storage

**Handling** Keep containers tightly closed.

**Storage** Keep away from all sources of ignition.  
The minimum recommended storage temperature for this material is 20°C.  
The maximum recommended storage temperature for this material is 30°C.  
Store in a dry, well-ventilated area away from incompatible materials (see "materials to avoid").

## 7. Exposure controls / personal protection

**Exposure limits** TLV -TWA Not established

**Ventilation requirements** Use local exhaust as necessary, especially under dusty conditions.

**Personal protection equipment** Respiratory protection Approved respirator - Gloves PVC gloves - Eye protection.  
Chemical safety goggles - Others Body covering clothes and boots Industrial hygiene.  
Safety shower and eye bath should be provided. Do not eat, drink or smoke until after-work.  
showering and changing clothes.

## 8. Physical and chemical properties

**Appearance** White to off-white tablet with faint halogenous odour

**Melting point/range** 123 - 125°C

**Boiling point/range** Not determinable, decomposes above 160°C

**Vapour pressure** 9.35x10<sup>(-3)</sup> Pa at 25°C

**Relative vapour density (air=1)** Not applicable under standard conditions

**Evaporation rate (ether=1)** Not applicable under standard conditions

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<b>Solubility</b>	Solubility in water 0.2 g/100ml at 25°C Solubility in other solvents Benzene: 2.5 g/100g at 25°C
<b>Specific gravity</b>	1.8-2.0
<b>Thermal decomposition</b>	Above 160°C

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## 9. Stability and reactivity

<b>Stability</b>	Stable under normal conditions
<b>Materials to avoid</b>	Oxidizing agents Combustible organic materials Bases
<b>Conditions to avoid</b>	Heating above 160°C
<b>Hazardous decomposition products</b>	HBr, Br <sub>2</sub> , HCl
<b>Hazardous polymerization</b>	Will not occur

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## 10. Toxicological information (\*)

<b>Acute toxicity</b>	Rat oral LD50 (*) 929 mg/kg Rat inhalation LC50 (*) 1.1 mg/l/4 hour (powder) Dermal irritation (rabbit) (*) Corrosive
<b>Dermal sensitization</b>	(guinea pig) (*) Sensitizer
<b>Effects of overexposure</b>	Ocular Severe irritant May cause temporary or even permanent eye damage Dermal Exposure to wet skin may cause severe irritation Inhalation Irritant to upper respiratory tract Shortness of breath, headache and nausea Sensitization Prolonged skin contact may cause sensitization
<b>Chronic toxicity</b>	Not available
<b>Mutagenicity Mutagenic</b>	by the Ames Test
<b>Carcinogenicity</b>	Not known to be a carcinogen Not included in NTP 9th Report on Carcinogens Not classified by IARC

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## 11. Ecological information

<b>Aquatic toxicity</b>	96 Hour-LC50 - Fish 0.4 mg/l (Rainbow trout, Static) 0.46 mg/l (Bluegill sunfish, Static) 1.6 mg/l (Sheeps head minnow, Acute flow through) 1.2 mg/l (Eastern oyster, Acute flow through) 1.9 mg/l (Mysid shrimp, Acute flow through) 48 Hour-LC50, Daphnia magna 0.75 mg/l (Static)
<b>Avian toxicity</b>	Bobwhite quail, acute oral LD50 1839 mg/kg Mallard duck, dietary LC50 >5620 ppm Bobwhite quail, dietary LC50 >5620 ppm

## 12. Disposal considerations

Waste disposal Dispose of in approved landfill sites or an approved incinerator.  
Crush and bury empty containers.  
Avoid access to streams, lakes or ponds.  
Observe all federal, state and local environmental regulations when disposing of this material.

## 13. Transportation information

UN No.	1479
IMO-IMDG code Proper shipping name	oxidizing solid, n.o.s
Class	5.1 - Oxidizing substances
Packing Group	I
Marking	MARINE POLLUTANT (IMDG CODE - page 5163, amdt.29-98)
ICAO/IATA Class	5.1
Packing group	II
Label	OXIDIZER (5.1)

<b>RID/ADR</b>	Class and Item Nos.: 5.1, 27 <sup>(b)</sup> Danger Label Model No.: 5.1 Hazard/Substance Nos.: 50/1479 Proper shipping name: Oxidizing solid, n.o.s Class: 5.1 - Oxidizing substances
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Label: OXIDIZER (5.1)

Packing Group: II

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## 14. Regulatory information (\*)

EEC Reported in EINECS (No. 2511715)

- R Phrase(s)

R 8 :Contact with combustible material may cause fire.

R 31 :Contact with acids liberates toxic gas.

R 34 :Causes burns.

R 22 :Harmful if swallowed.

R 43 :May cause sensitization by skin contact.

- S Phrase(s)

S 26 :In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 28 :After contact with skin, wash immediately with plenty of water and soap.

S 45 :In case of accident or if you feel unwell, seek medical advice immediately (show the label when possible).

S 36/37/39 :Wear suitable protective clothing, gloves and eye/face protection.

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## Other Information

*The above information is accurate to the best of the knowledge available to us. However since data safety standards and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control we make no warranty, whether express or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Users should satisfy themselves that they have all current data relevant to their particular use.*

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