

MATERIAL SAFETY DATA SHEET

MSDS DATE: 5/2/2006

MSDS No.: AQUAMIRA TABLET

AQUAMIRA WATER PURIFIER TABLET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: **AQUAMIRA WATER PURIFIER TABLET**

Product Description: RELEASE MATERIAL

EPA #: 70060-22-71766

MANUFACTURER:

AQUAMIRA TECHNOLOGIES, INC.

1411 MEADOR AVENUE

BELLINGHAM, WA, USA 98229-5845

**24 HR. EMERGENCY TELEPHONE
NUMBERS**

Emergency Contact: CHEM*TEL

Emergency Phone: 1-800-255-3924

2. COMPOSITION/INFORMATION ON INGREDIENTS

	<u>CAS Registry #</u>	<u>%</u>
Sodium Chlorite	7758-19-2	5-10
Inorganic Acid		30-45
Inorganic Salts		15-40
Inorganic Base		15-30
Sodium Dichloroisocyanurate Dihydrate	51580-86-0	.5-2

3. HAZARDS IDENTIFICATION

Color: White

Form: Tablets

Odor: Odorless to slight chlorine odor

Flash Point, °C: Not applicable

Most Important Hazards: Irritating to eyes, respiratory system, and skin. Harmful by inhalation, by contact with skin, and if swallowed. May cause pain, nausea, vomiting, and diarrhea. Upon exposure to moisture, this product releases gas. Upon exposure to water, this product releases.

POTENTIAL HEALTH EFFECTS:

EYES: Causes severe eye irritation. May cause burns. Causes eye damage.

SKIN: Exposure to the material in its concentrated form: Harmful by skin contact. May cause toxic effects by prolonged or extensive skin contact. Causes skin irritation. Prolonged contact may cause dermatitis. Contact with a dilute solution (100 ppm), made from a similar product, was slightly irritating to rabbit skin. (See section 11).

INGESTION: Harmful if swallowed. May cause irritation of the mouth, throat, and stomach. May cause pain, nausea, vomiting, and diarrhea. May cause weakness and fatigue.

INHALATION: Harmful if inhaled. Exposure to dust particles generated from this material causes irritation of the respiratory tract. May result in coughing, difficulty breathing, and sore throat.

Exposure to high concentrations may cause bronchospasms.

OTHER EFFECTS: Note: upon exposure to moisture, this product releases chlorine dioxide gas. Inhalation of chlorine dioxide may cause irritation, coughing, wheezing, and burns of the mucous membranes. Inhalation of large amounts may lead to pulmonary edema and bronchitis. Direct contact with chlorine dioxide causes eye and skin irritation and may cause burns. Toxic by oral exposure.

Note: Upon exposure to water, this product releases carbon dioxide. Inhalation of carbon dioxide may cause headache, drowsiness, difficulty breathing, and mental confusion. Inhalation of high concentrates can cause loss of consciousness.

Carcinogenicity:

Ingredient	Weight in product (%)	NTP (Y/N)	IARC (See Notes)	OSHA (Y/N)	ACGIH (See Notes)
Inorganic Acid	30-45	N	N	N	N
Inorganic Salts	15-40	N	N	N	N
Inorganic Base	15-30	N	N	N	N
Sodium Chlorite	5-10	N	N3	N	N
Sodium Dichloroisocyanurate Dihydrate	.5-2	N	N	N	N

Notes:

IARC: Y1 = carcinogenic to humans. Y2A = probably carcinogenic to humans. Y2B = possibly carcinogenic to humans. N3 = not classifiable as to its carcinogenicity. N = not studied or probably not carcinogenic.

ACGIH: A1 = confirmed human carcinogen. A2 = suspected human carcinogen. A3 = confirmed animal carcinogen. A4 = not classifiable as a human carcinogen. A5 = not suspected as a human carcinogen. N = not studied.

Chronic Health Hazards: Prolonged or repeated exposure to dust may cause pulmonary problems.

Aggravated Medical Conditions: Pulmonary disorders. Dermal ailments. Kidney disorders.

4. FIRST AID MEASURES

EYES: Flush with large amounts of water for at least 15 minutes holding eyelids open. Get medical attention.

SKIN: Wash off immediately with soap and water. Remove and wash contaminated clothing before re-use. Get medical attention if irritation persists.

INGESTION: If conscious, give large amounts of water to dilute. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention.

INHALATION: Move to fresh air. Seek medical attention if person is experiencing respiratory distress.

5. FIRE FIGHTING MEASURES

Flash Point & Method: Not applicable.

Upper & Lower Explosive Limits: Not determined.

Auto Ignition Temperature: Not determined.

Extinguishing Media: Flood with water. Apply from a safe distance.

FIREFIGHTING PROCEDURES: Positive pressure, self-contained breathing apparatus. Wear full protective clothing. Apply water from a protected location or safe distance.

UNUSUAL FIRE AND EXPLOSION HAZARDS: May be a mild oxidizer. May increase flammability of combustible, organic, or other readily oxidizable materials. Contact with moisture will produce gas. The lower explosive limit (LEL) for is 10%. If large amounts of the product are involved in a fire, it is possible that the application of water mist or fog could release enough gas in a confined space to present an explosion hazard. The will dissolve harmlessly in flooding amounts of water.

6. ACCIDENTAL RELEASE MEASURES

SPILLS: Contain spillage. Scoop up or vacuum into a container for reclamation or disposal.

7. HANDLING AND STORAGE

HANDLING: Avoid contact with heat, sparks, open flame, and static discharge. Keep container closed. Store in a cool, dry location away from incompatible materials. Avoid contact with water and water vapor prior to use. Wash thoroughly after handling. Avoid generating or breathing dust. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredient	Weight in product (%)	OSHA PEL:	ACGIH TLV:
Inorganic Acid	30-45	None Established	None Established
Inorganic Salts	15-40	None Established	None Established
Inorganic Base	15-30	None Established	None Established
Sodium Chlorite	5-10	None Established	None Established
Sodium Dichloroisocyanurate Dihydrate	.5-2	None Established	None Established

Unless otherwise noted, all values are reported as 8-hour Time-Weighted Averages (TWAs) and total dust (particulates only). All ACGIH TLVs refer to the 2005 standards. Unless otherwise noted, all OSHA PELs refer to 29 CFR Part 1910 Air Contaminants: Final Rule, June 30, 1993.

PEL TLV Notes: Note: Upon exposure to moisture, this product releases chlorine dioxide. The OSHA PEL for chlorine dioxide is 0.1 ppm. The ACGIH TLV for chlorine dioxide is 0.1 ppm, 0.3 ppm STEL.

Note: Upon exposure to water, this product releases carbon dioxide. The OSHA PEL for carbon dioxide is 5,000 ppm (1993 Final Rule). The ACGIH TLV for carbon dioxide is 5,000 ppm, 30,000 ppm STEL.

PERSONAL PROTECTIVE EQUIPMENT:

EYES AND FACE: Use safety glasses with side shields.

RESPIRATORY: Use approved respiratory protection if exposure limits are exceeded, or overexposure is likely. If respiratory protection is used, follow all requirements for respiratory programs set forth in OSHA regulations (29 CFR 1910.134).

SKIN: Wear suitable gloves. Wash thoroughly after handling. Wear clean, body-covering clothing.

VENTILATION: General ventilation. Local exhaust ventilation is recommended to control exposures to within applicable limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Tablets

Color: White

Odor: Odorless to slight chlorine like odor

Vapor Pressure: Negligible

Bulk Density: 1.5g/cc

Decomposition Temperature, °C: 120-190

Solubility in water: Reacts with water

pH: 6-7 (0.0025% slurry solution)

10. STABILITY AND REACTIVITY

STABILITY: Stable.

CONDITIONS/HAZARDS TO AVOID: Heat. Exposure to light.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: Chlorine. Oxides of carbon.

INCOMPATIBLE MATERIALS: Strong acids or alkalines. Strong oxidizing agents. Reducing agents. Combustible materials.

HAZARDOUS REACTIONS: Upon exposure to water vapor, chlorine gas is released.

POLYMERIZATION – AVOID: None anticipated.

11. TOXICOLOGICAL INFORMATION

Information on product:

Acute Toxicity – Dermal: For 100 ppm chlorine dioxide solution made from a similar product:
Acute Dermal LD₅₀ (rat) > 5000 mg/kg

Acute Toxicity – Inhalation: For 200 ppm chlorine dioxide solution made from a similar product:

Acute Inhalation LC₅₀ (rat, 4-hour) > 2.07 mg/l

Skin Irritation: For 100 ppm chlorine dioxide solution made from a similar product:

Primary Dermal Irritation Index (rabbit) = 0.1 (slightly irritating)

Eye Irritation: For 100 ppm chlorine dioxide solution made from a similar product:

Primary Eye Irritation (rabbit) = non-irritating

Sensitization: For 100 ppm chlorine dioxide solution made from a similar product:

Dermal Sensitization (guinea pig) = not a contact sensitizer

Other Information: Upon exposure to moisture, this product releases chlorine dioxide. The oral LD₅₀ in rats for chlorine dioxide has been reported as 292 mg/kg.

Information on Components:

Ingredient	Weight in product (%)	ACUTE TOXICITY ORAL	ACUTE TOXICITY INHALATION	ACUTE TOXICITY DERMAL	ACUTE TOXICITY OTHER
Inorganic Acid	30-45	Not Available	Not Available	Not Available	Not Available
Inorganic Salts	15-40	2,800 mg/kg (rat)	Not Available	Not Available	Not Available
Inorganic Base	15-30	4,220 mg/kg (rat)	Not Available	Not Available	Not Available
Sodium Chlorite	5-10	165 mg/kg (rat)	230mg/mg ³ /4 hr (rat)	Not Available	Not Available
Sodium Dichloroisocyanurate Dihydrate	.5-2	1,420 mg/kg (rat)	Not Available	Not Available	Not Available

Ingredient:

Sodium Chlorite 7758-19-2

Weight in Product (%):

5-10%

Reproduction Toxicity:

Sodium Chlorite has been shown to cause reproductive disorders in laboratory animals.

12. ECOLOGICAL INFORMATION

Information on Product:

Environmental Fate: Chlorite and chlorine dioxide are broken down quickly, to chloride ions, in the environment.

Mobility: This product is reactive with water, releasing sodium, magnesium, chloride ions, sulfate ions, and hydrogen ions.

Ecotoxicological Information: Breaks down quickly in the environment, but can be toxic to aquatic microorganisms and small invertebrates. May cause long-term adverse effects to these organisms.

Ingredient:

Sodium Chlorite 7758-19-2

Reproduction Toxicity:

Daphnia Magna, 48 hour TL50: 0.29/mg/l (No effect level: 0.10 mg/l) Mallard duck, dietary LC50: 10,000 ppm

13. DISPOSAL CONSIDERATIONS

USA EPA Waste Number: D003

DISPOSAL METHOD: Local disposal laws and regulations will determine the proper waste disposal/recycling/reclamation procedure. Disposal requirements are dependent on the hazard classification and will vary by location and the type of disposal selected. All waste materials should be reviewed to determine the application hazards (testing may be necessary).

14. TRANSPORT INFORMATION

INTERNATIONAL TRANSPORT REGULATIONS:

ICAO UN/ID No.: UN 2813

ICAO Class: 4.3

Proper Shipping Name: Water Reactive Solid, N.O.S. (Sodium Chlorite)

ICAO Packing Group: II

Packing Instruction: 415/417 NOTE: This classification applies to air transport within US jurisdiction. Classification for air transport outside of US jurisdiction is: Not Regulated.

IMO Class: Not Regulated

DOT (US DEPARTMENT OF TRANSPORTATION)

DOT Classification: 4.3 Dangerous When Wet Material

Proper Shipping Name: Water Reactive Solid, N.O.S. (contains Sodium Chlorite)

Hot Hazard: No

Combustible Hot Drum: No

Combustible Class: No

Hazard Class: None

NA/UN/PIN Number: UN 2813

Packing Group: II

Reportable Quantity (RQ) Under CERCLA: N/A

U.S. Surface Freight Class: N/A

Bulk Freight Class: N/A

CANADIAN TRANSPORTATION OF DANGEROUS GOODS (TDG)

TDG Classification: 4.3 Dangerous When Wet Material

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):

311/312: Acute Health Hazard Reactive Hazard

313 Does not contain hazardous components subject to reporting requirements.

NFPA Classification:

Health: 2

Flammability: 0

Instability: 1

Special Hazards:

HMIS Classification:

Health: 2

Flammability: 0

Reactivity: 1

Personal Protection: B

US CAA 602 Ozone Depleting Substances (ODS):

This product neither contains nor is manufactured with an ozone depleting substance subject to the labeling requirements of the Clean Air Act Amendments 1990 and 40 CFR Part 82.

US State Regulations:

VOC Content (CARB): Not Applicable

International Inventories:

United States: This product or its ingredients are listed on or compliant with the TSCA inventory.

Canada: This product or its ingredients are listed on or compliant with the DSL.

Europe: This product or its ingredients are listed on or compliant with EINECS.

Japan: This product or its ingredients are listed on or compliant with MITI.

Australia: This product or its ingredients are listed on or compliant with AICS.

Korea: This product or its ingredients are listed on or compliant with the ECL.

Canadian Regulations:

WHMIS Classification:

Class B Division 6

Class D Division 1 Subdivision B

Class D Division 2 Subdivision B

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all the information required by the *Controlled Products Regulations*.

16. OTHER INFORMATION

MANUFACTURER DISCLAIMER:

Information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and for the safety and health of employees.