Material Safety Data Sheet

NA (Not Applicable), **ND** (Not Determined), **NE** (Not Established, **NT** (Not Tested)

IDENTITY *(As Used on Label and List)*	*Note: Blank spaces are not permitted. If any item is not applicable, or no Information is available, the space must be marked to indicate that.*
Microbiocide 27-B	

Section I

Manufacturer's Name Water Chemistry, Inc.	Emergency Telephone Number (540) 989-0400
Address (*Number, Street, City, State, and ZIP code)* 3404 Aerial Way Drive	Telephone Number for Information (540) 343-3618
Roanoke, VA 24018	Date Prepared June 2012
	Signature of Preparer (*Optional)*

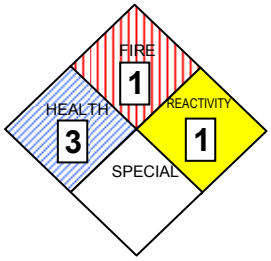
Section II – Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity: Common Name(s)	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
2,2-Dibromo-3-nitrilopropionamide	NA	NA		20%

The information in this data sheet has been assembled based on our studies And on the work of others. The manufacturer makes no warranties, expressed or implied, as to the accuracy, completeness, or adequacy of the information contained herein. The manufacturer shall not be liable (regardless of fault) to the vendee, the vendee's employees, or anyone for any direct, special or consequential damages arising out of or in connection with the accuracy, completeness, adequacy, or furnishing of such information.

HAZARD RATING

4 = EXTREME
3 = HIGH
2 = MODERATE
1 = SLIGHT
0 = INSIGNIFICANT
* = CHRONIC HEALTH HAZARD – SEE SECTION VI



SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point Decomposition Temperature	>70°C (158°F)	pH (Neat) pH (100 ppm in water)	1.5 to 5 (Acidic) N/A
Vapor Pressure (mmHg)	18.9 mm of Hg (@ 20°C	Melting Point	<-50°C (-58°F)
Density	1.2 - 1.3 g/cm^3 at 25°C (77°F)	Evaporation Rate (Water = 1)	NA

Solubility in Water
Partially soluble in cold water. Partially soluble in hot water.

Appearance and Odor
Colorless to brown liquid with a slight odor

SECTION iv – Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LFL	UFL
Closed cup: 100°C (212°F) Open cup: >182°C (359°F) (Cleveland)		ND	ND

Extinguishing Media
Water fog or fine spray. Carbon dioxide fire extinguishers. Foam. Do not use direct water spray.

Special Fire Fighting Procedures Firefighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. (Includes fire fighting helmet, coat, pants, boots, and gloves). Avoid contact with material.

Unusual Fire and Explosion Hazards Keep people away. Isolate fire area and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed. If product is contaminated with water, monitor product for heat generation and/or decomposition. Fight fire from a safe distance. Contain fire run-off, if possible. This material will not burn until the water has evaporated. Residue can burn. Container may rupture from gas generation in a fire situation.

Hazardous Combustion Products: Under fire conditions, some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: oxides of nitrogen and carbon, hydrogen bromide. This material will not burn until the water has evaporated. Residue can burn. Container may rupture.

Section V – Reactivity Data			Microbiocide 27-B
Stability	Unstable		Conditions to Avoid - Avoid temperatures above 70°C (158°F). High temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Do not allow to freeze.
	Stable	X	

Incompatibility (Materials to Avoid)
Oxidizers, strong bases, metals such as: Aluminum

Hazardous Decomposition or Byproducts Decomposition products depend upon temperature, air supply, and the presence of other materials. Decomposition products can include and are not limited to: carbon dioxide, bromine, cyanogen bromide, dibromoacetonitrile.

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

Section VI – Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Eyes?	Ingestion?
	Yes	Yes	Yes	Yes

Health Hazards (Acute and Chronic)

EYE: May cause pain disproportionate to the level of irritation to eye tissues. May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

SKIN: Prolonged contact may cause severe skin irritation with local redness and discomfort. Repeated exposure may cause irritation, even a burn. May cause more severe response if skin is abraded (scratched or cut). Prolonged skin contact is unlikely to result in absorption of harmful amounts.

INHALATION: Mist may cause irritation of upper respiratory tract (nose and throat).

INGESTION: Harmful if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause serious injury, even death.

Toxicity: Acute Oral LD50 = 510 mg/kg Rat — Acute Inhalation LC50 =1.25 mg/l (4 hours) Rat Female
Acute Dermal LD50 = >2000 mg/kg Rabbit — Acute Inhalation LC50 = 1.4 mg/l (4 hours) Rat Male

Environmental Toxicity: LC50 = 3.6 mg/l 96 hours Rainbow trout
LC50 = 2.5 mg/l 48 hours Daphnia magna
LC50 = 1.5 mg/l 72 hours Pseudokirchneriella subcapitata

Carcinogenicity:
Active ingredient did not cause cancer in laboratory animals.

Emergency and First Aid Procedures

EYE: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

SKIN: Take off contaminated clothing. Rinse skin immediately with soap and plenty of water for 15-20 minutes. Call a doctor or poison control center for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Safety shower should be available in work area.

INHALATION: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth, use rescuer protection (pocket mask etc.). Call a doctor for treatment advice.

INGESTION: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor.

Never give anything by mouth to an unconscious person.

Notes to physician: Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have th3e Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment. Emergency Personnel Protection: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section VII - Precautions For Safe Handling for specific personal protective equipment.

Section VII – Precautions for Safe Handling and Use	Microbiocide 27-B
Steps to be Taken in Case Material is Released or Spilled Contain spilled material, if possible. Attempt to neutralize by adding materials such as sodium bisulfite, sodium metabisulfite. Neutralize with 17.2 grams sodium bisulfite or 15.7 grams sodium metabisulfite for every 100 grams biocidal product. Absorb with materials such as: dirt, sand, vermiculite, Hazorb, Zorb-all. Collect in suitable and properly labeled containers. Keep upwind of spill. Evacuate area. Use appropriate safety equipment.	
Waste Disposal Method Contact appropriate local, state, and federal regulatory agencies before discharging or disposing of waste material.	
Precautions to Be Taken in Handling and Storing Keep container tightly closed. Store in a cool, dry place. (<=35°C). Do not breathe mists or get in eyes, skin, or on clothing. Wash hands thoroughly after handling.	
Other Precautions - Do not get in eyes, on skin, on clothing. Do not swallow. Avoid breathing vapor. Do not store in Aluminum.	
DOT Shipping Information: UN3265, Corrosive Liquid, Acidic, Organic, N.O.S., (2,2-Dibromo-3-nitrilopropionamide), Class 8, P. G. III, (ERG Guide 153) --- Not available for air shipment.	
Section VIII – Control Measures	
Respiratory Protection (Specify Type) Respiratory protection should be worn when there is a potential to exceed the exposure limits. In misty atmospheres, use an approved particulate respirator. Ex: Organic vapor cartridge with a particulate pre-filter	
Ventilation Local Exhaust Yes	Special NA
Mechanical (General) Yes	Other NA
Protective Gloves Viton, Neoprene, Polyvinyl chloride, Nitrile/butadiene rubber (nitrile or NBR)	
Other Protective Clothing or Equipment Use chemical goggles. Use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron or full-body suit will depend on the task.	
Work/Hygienic Practices Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.	