B-22b
SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION

Product Identifier: B-22b

EPA Pesticide Registration Number: 72714-1

Recommended use: A microbiocidal bactericide, fungicide, algaecide, and slimicide.

Manufactured for: Aquaserv, Inc.
570 N. Rivergate Rd.
Memphis, TN 38109

24 Hour Emergency Phone: **(901) 525-7701**
CHEMTREC: **(800) 424-9300**

SECTION 2 – HAZARDS IDENTIFICATION

Hazard Classification

GHS classification in accordance with 29 CFR 1910.1200
Acute Toxicity: Oral, Category 4
Acute Toxicity: Inhalation (Dusts/Mists), Category 4
Serious Eye Damage/Eye Irritation: Category 1
Skin Sensitization: Category 1A
Specific Target Organ Toxicity (Repeated Exposure): 1
Acute Aquatic Toxicity: Category 2
Chronic Aquatic Toxicity: Category 2
Metal Corrosivity: Category 1

Label Elements
Pictograms:



Signal Word: **Danger**

Hazard Statement(s):
H302 – Harmful if swallowed.
H332 – Harmful if inhaled.
H317 – May cause an allergic skin reaction.
H318 – Causes serious eye damage.
H372 – Causes damage to organs through prolonged or repeated exposure if inhaled (respiratory tract).
H401 – Toxic to aquatic life.
H411 – Toxic to aquatic life with long-lasting effects.
H290 – May be corrosive to metals.

Precautionary Statement(s):
P264 – Wash face, hands and any exposed skin thoroughly after handling.
P270 – Do not eat, drink or smoke when using this product.
P261 – Avoid breathing dust/fume/gas/mist/vapors/spray.

P271 – Use only outdoors or in a well-ventilated area.
P272 – Contaminated work clothing should not be allowed out of the workplace.
P362 - Take off contaminated clothing and wash before reuse.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P273 – Avoid release to the environment.

Response Statement(s): P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302+352 – IF ON SKIN: Wash with plenty of soap and water.
P333+313 – If skin irritation or rash occurs: Get medical advice/attention.
P301+330+331 – IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P391+P312 – IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P304+340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310 – Immediately call a POISON CENTER or doctor/physician.
P362 – Take off contaminated clothing and wash before reuse.
P390 – Absorb spillage to prevent material damage.
P391 – Collect spillage. Hazardous to the aquatic environment.

Storage Statement(s): P405 – Store locked up.
P406 – Store in corrosive resistant container with a resistant inner liner.

Disposal Statement: P501 – Dispose of contents/container in accordance with local, regional, national, and international regulations.

Other hazards: No data available

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CAS No.	% by Wt.
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	19.0 – 21.0
Polyethylene glycol	25322-68-3	50.0 – 60.0
Water	7732-18-5	20.0 - 30.0

SECTION 4 – FIRST AID MEASURES

Description of first aid measures
General Advice: 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 8 for specific personal protective equipment.

Eye Contact: Wash immediately and continuously with flowing water for a minimum of 30 minutes, while holding eyelids apart to ensure flushing of entire surface. If easy to do, remove contact lenses after the first 5

minutes and continue washing. Do not let exposed individual rub eyes. Obtain prompt medical consultation preferably from an ophthalmologist. Suitable emergency eye wash facility should be Immediately available.

Skin Contact: Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. May cause an allergic skin reaction. In case of skin irritation or allergic reactions see a physician. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Suitable emergency safety shower facility should be immediately available.

Inhalation: Move person to fresh air. Get medical attention immediately if symptoms occur. If symptoms persist, call poison control center or a physician for treatment advice. If person is not breathing, give artificial respiration. If by mouth to mouth, use rescuer protection (pocket mask etc.). Call an emergency responder or ambulance.
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.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed 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. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. Probable mucosal damage may contraindicate the use of gastric lavage. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the 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.

SECTION 5 – FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Use extinguishing media appropriate to surrounding fire conditions. Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.

Unsuitable Extinguishing Media: Do not use direct water stream. May spread fire.

Special Firefighting Procedures: Use self-contained breathing apparatus (SCBA) in pressure demand and full protective gear. Use water spray to cool unopened containers.

Unusual Fire and Explosive Hazards: No data available.

Special hazards arising from the substance or mixture
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: Nitrogen oxides. Hydrogen bromide. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn. Container may rupture from gas generation in a fire situation.

Special Firefighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. If product becomes contaminated with water, monitor product for heat generation and/or decomposition. Fight fire from protected location or safe distance. Move containers from fire area if this is possible without hazard. Contain fire water run-off if possible. Review the "Accidental Release Measures" and the "Ecological Information" sections of this SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes helmet, coat, trousers, boots, and gloves). Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Ensure adequate ventilation. Evacuate nonessential personnel to safe areas. Keep people away from and upwind of spill/leak. Refer to section 7, Handling, for additional precautionary measures. Only trained and properly protected personnel must be involved in clean-up operations. Ventilate area of leak or spill. Use appropriate safety equipment. Avoiding breathing vapors or mists. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Avoid or prevent product from entering into soil, ditches, drains/sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Attempt to neutralize by adding materials such as sodium bisulfite or sodium metabisulfite. Neutralize with approximately 17.2 grams sodium bisulfite ($NaHSO_3$) or 15.7 grams sodium meta bisulfite ($Na_2S_2O_5$) for every 100 grams biocidal product. Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

SECTION 7 - HANDLING AND STORAGE

Conditions for Safe Handling: Keep out of reach of children. Avoid contact with the eyes, skin and clothing. Avoid breathing mists, vapors or aerosols. Avoid prolonged or repeated contact with skin. Do not swallow. Wash thoroughly with soap and water after handling. Use with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Wear protective clothing and equipment as described in Section 8. Exposure Controls and Personal Protection.

Conditions for Safe Storage: Store in original container. Keep container tightly closed when not in use in a dry and well-ventilated place. Store locked up. Store away from incompatible material(s).

Storage Stability
Shelf Life: Use within 12 months
Storage Temperature: $\leq$ 35°C ($\leq$ 95°F)

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no limits are displayed, then no values are applicable.

Occupational Exposure Limits

Component	CAS No.	OSHA PEL	ACGIH TLV	NIOSH IDLH
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	-	-	-
Polyethylene glycol	25322-68-3	-	-	-
Water	7732-18-5	-	-	-

Engineering Controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Personal Protective Equipment

Eye/Face Protection: Chemical safety goggles or face shield with safety glasses are required.

Hand Protection: Use gloves chemically resistant to this material: butyl rubber (best Butyl II, 0.7mm), polyethylene, chlorinated polyethylene, ethyl vinyl alcohol laminate ("EVAL"). Other acceptable glove barrier materials include Viton, Neoprene (0.75mm), Polyvinyl chloride ("PVC" or "vinyl"), and/or Nitrile/butadiene rubber ("nitrile" or "NBR" 0.38mm).

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or fully body suit will depend on the task.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

General Hygiene Considerations: Avoid contact with eyes, skin or clothing. Eye wash fountains and safety showers in the workplace are strongly recommended. Do not eat, drink, or smoke in areas where chemicals are being stored or handled. Wash thoroughly before handling food or beverages.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear, colorless to amber liquid
Odor	Chlorine/bromine-like
Specific Gravity @ 23°C	1.19 g/cc
Boiling Point	> 70.0 °C (158.0 °F)
Freezing Point	-13 to -4°F (-25 to -20 °C)
Decomposition Temperature	> 70.0 °C (158.0 °F)
Auto-Ignition Temperature	N/A
Flash Point	159 - 165°C
Explosive Limits	N/A
pH	2.0 – 6.7
Solubility in Water	Soluble
Vapor Pressure @ 20°C (68°F)	2266.5 Pa

Vapor Density (Air = 1)	< 1
Percent Volatile	N/D
Evaporation Rate	< 1

N/A = Not Applicable, N/D= Not Determined

NOTE: The physical data presented above represent typical values and should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: No reactive hazards known/expected.

Chemical Stability: Stable under recommended storage conditions. See Storage, Section 7.

Possibility of Hazardous Reactions: Polymerization will not occur. Reacts with water, acids, and bases generating toxic gases, vapors, and fumes. Corrosive to metals.

Conditions to Avoid: Exposure to light and/or heat. Avoid temperatures above 70°C (185°F). Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: Avoid contact with: Strong acids, Strong bases, Strong oxidizing agents, and/or Reducing agents.

Hazardous Decomposition Products: 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 and/or dibromoacetonitrile.

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute Toxicity
Acute Oral Toxicity: Low toxicity if swallowed. Swallowing may result in irritation or burns of the mouth, throat, and gastrointestinal tract. May cause dizziness and drowsiness.

LD50, Rat, 1387 mg/kg

Acute Dermal Toxicity: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50, Rat/Rabbit, > 4,000 mg/kg

Acute Inhalation Toxicity: Mist may cause irritation of upper respiratory tract (nose and throat).
LC50, Rat, 4 Hour, dust/mist, 1.05 mg/l

Chemical Name	Oral LD_{50}	Dermal LD_{50}	Inhalation LC_{50}
2,2-Dibromo-3-nitrilo-propionamide	167 mg/kg (Female rats)	>2000 mg/kg (Rabbit)	0.32 mg/l (4 hrs., Rat)

(CAS No. 10222-01-2)			
Polethylene Glycol (CAS No. 25322-68-3)	22 g/kg (Rat)	>20 g/kg (Rabbit)	

Skin corrosion/irritation: Brief contact may cause skin irritation. Symptoms may include pain, severe local redness and tissue damage.

Serious eye damage/eye irritation: May cause serious eye damage. 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.

Sensitization: May cause allergic skin reactions in humans by contact.

Respiratory Sensitization: No information available.

Specific Target Organ Systemic Toxicity (Single Exposure): The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific Target Organ Systemic Toxicity (Repeated Exposure): Excessive exposure may increase the blood and tissue levels of bromine. Cause damage to respiratory tract through prolonged or repeated exposure Observations in animals include kidney effects following repeated ingestion of active ingredient, but no evidence of systemic toxicity following repeated dermal exposure at maximum attainable doses

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

Teratogenicity: Not teratogenic. NOAEL (for fetal toxicity in rabbits was > = 10 mg/kg/day) for the active ingredient (DBNPA).

Reproductive toxicity: The product did not demonstrate reproductive toxicity. In a 2-generation study in rat, the NOEL for reproduction parameters was >= 30 mg/kg/day for the active ingredient (DBNPA).

Mutagenicity: Not mutagenic. Active ingredient was not mutagenic in several in vitro genetic toxicity studies.

Aspiration Hazard: Based on physical properties, not expected to occur.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available. Ecological data have not been determined specifically for this product. The environmental toxicity data mentioned below are for studies conducted or from published literature on the active ingredient: 2,2-dibromo-3-nitrilopropionamide.

Marine pollutant: Yes

Ecotoxicity: Toxic to aquatic life with long lasting effects.

Acute Toxicity to Fish
Material is toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, 3.6 mg/L
LC50, Cyprinodon variegatus (sheepshead minnow), 96 Hour, 3.4 mg/L
LC50, Mysidopsis bahia (Mysid shrimp), 48 Hour, 0.72 mg/L

Acute Toxicity to Aquatic Invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, 2.5 mg/L

Acute Toxicity to Algae/Aquatic Plants
EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 1.5 mg/L

Chronic Aquatic Toxicity
Chronic Toxicity to Aquatic Invertebrates
NOEC, Daphnia magna (Water flea), flow-through test, 21 d, 0.06 mg/L

Persistence and Degradability

Biodegradability: Not readily biodegradable. Hydrolysis rate increases with an increase in either pH or temperature (half life @ pH 7, 65 hours at 25°C.
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3), not expected to bioaccumulate.
Partition coefficient: n-octanol/water(log Pow): 0.79 Measured
Bioconcentration factor (BCF): 13 Fish Measured

Mobility in soil

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 15 Estimated.

SECTION 13 - DISPOSAL CONSIDERATIONS

Disposal Procedure: Dispose of waste at an appropriate waste disposal facility according to current applicable federal, state, and local regulations. For product disposal, dispose of at a supervised incineration facility or an appropriate waste disposal facility according to current applicable laws and regulations and product characteristics at time of disposal. As your supplier, we have no control over the management practices or parties handling or using this material. The information presented here pertains only to the product as shipped in its intended condition as described in SDS Section 3, Composition Information.

SECTION 14 - TRANSPORT INFORMATION

DOT

UN/ID No.:	UN3265
UN Proper Shipping Name	Corrosive liquid, acidic, organic, n.o.s. (2,2-Dibromo-3-nitrilopropionamide)
Hazard Class:	8
Packing Group:	III
Description:	Corrosive liquid, acidic, organic, n.o.s. (2,2-Dibromo-3-nitrilopropionamide), 8, III
Emergency Response Guide Number	153

TDG

UN/ID No.:	UN3265
UN Proper Shipping Name	Corrosive liquid, acidic, organic, n.o.s. (2,2-Dibromo-3-nitrilopropionamide)
Hazard Class:	8
Packing Group:	III
Description:	Corrosive liquid, acidic, organic, n.o.s. (2,2-Dibromo-3-nitrilopropionamide), 8, III

IMO-IMDG

UN/ID No.:	UN3265
UN Proper Shipping Name:	Corrosive liquid, acidic, organic, n.o.s. (2,2-Dibromo-3-nitrilopropionamide), Marine pollutant
Hazard Class:	8
Packing Group:	III
EMS-No:	F-A, S-B
Special Precautions:	None
Marine Pollutant:	Yes
Description:	Corrosive liquid, acidic, organic, n.o.s. (2,2-Dibromo-3-nitrilopropionamide), 8, III, Marine pollutant

ICAO/IATA

UN/ID No.:	UN3265
UN Proper Shipping Name:	Corrosive liquid, acidic, organic, n.o.s. (2,2-Dibromo-3-nitrilopropionamide)
Hazard Class:	8
Packing Group:	III
Environmental Hazards:	Yes
ERG Code:	8L
Special Precautions:	None
Marine Pollutant:	Yes
Description:	Corrosive liquid, acidic, organic, n.o.s. (2,2-Dibromo-3-nitrilopropionamide), 8, III, Marine pollutant

SECTION 15 - REGULATORY INFORMATION

US Federal Regulations

U.S. TSCA (Toxic Substances Control Act) – Section 5(a)(2)
This product does not contain any substances subject to Significant New Use Rules (SNURs).

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40CFR 122.42).

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulation
The following chemicals are listed because of the additional requirements of Pennsylvania and New Jersey law:

Components	CAS No.
2,2-Dibromo-3-nitrilopropionamide	10222-01-2

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory (NZIoC)	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
Thailand	Thailand Inventory FDA Existing Chemicals (TECI)	Yes
Vietnam	Vietnam National Chemicals Inventory (NCI)	Yes
U.S.A. & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
Mexico	National Inventory of Chemical Substances (NSQ)	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

U.S. EPA Label Information
EPA Pesticide Registration Number: 72714-1
EPA Pesticide Label
DANGER
Corrosive
Causes irreversible eye damage
Eye contact may cause loss of vision
May be fatal if swallowed
Harmful if inhaled or absorbed through skin
Causes skin irritation
Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals
This product is toxic to fish and aquatic organisms
Reaction with strong reducing agents may be explosive.
Avoid misting.

SECTION 16 – OTHER INFORMATION

Issue Date:	January 8, 2020
Revision Date:	05/04/2023
Revision Summary:	Section 15
Prepared By:	Product Stewardship Team
Revision Information:	N/A

This Safety Data Sheet was prepared to comply with the OSHA Hazard Communication Standard, 29 CFR 1910.1200. Aquaserv provides no warranties; either expressed or implied and assumes no responsibility for the accuracy or completeness of the data contained herein. The data contained in this Safety Data Sheet reflects the latest information available to us on hazards, properties, and handling of this product under the recommended conditions of use. The information on this Safety Data Sheet relates only to the material as supplied and does not relate to combinations with other materials or processes.