

# Safety Data Sheet

## AQUARIAN B108



### 1. Identification

Product identifier	AQUARIAN B108
Product code	B108
Other means of identification	None.
Recommended use of the chemical and restrictions on use	Steam boiler water treatment.
Manufacturer	AQUARIAN CHEMICALS INC. 768 Westgate Road Oakville, Ontario Canada L6L 5N2 Tel. 905-825-3711 Fax 905-825-0177 <a href="http://www.aquarianchemicals.com">www.aquarianchemicals.com</a> <a href="mailto:info@aquarianchemicals.com">info@aquarianchemicals.com</a>
Emergency phone number	Canutec: 613-996-6666

### 2. Hazard identification

Summary	CORROSIVE! Use only in well ventilated area. Avoid all contact with skin, eyes and clothing. Do not breathe vapors, mists or aerosols. Do not ingest. If ingested consult physician immediately and show this Safety Data Sheet. Wear eye protection, gloves, respiratory protection and other protective clothing that are adapted to the task being performed and the risks involved.
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#### WHMIS 2015/OSHA HCS 2012/GHS



Acute toxicity, oral (Category 4)  
Skin corrosion (Category 1)  
Serious eye damage (Category 1)  
Skin sensitizer (Category 1)  
Specific target organ toxicity, repeated exposure (Category 2)

**Other hazards which do not result in classification :**  
Acute hazard to the aquatic environment (Category 3).

#### DANGER

H314: Causes severe skin burns and eye damage  
H302: Harmful if swallowed  
H317: May cause an allergic skin reaction  
H373: May cause damage to organs through prolonged or repeated exposure  
H402: Harmful to aquatic life  
P260: Do not breathe mist, vapors and spray.  
P264: Wash face, hands and any exposed 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 should not be allowed out of the workplace.  
P273: Avoid release to the environment.

P280: Wear protective gloves, protective clothing and eye protection.  
P301+330+331+P310: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.  
P303+361+353: IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water and soap or take a shower if necessary.  
P333+313: If skin irritation or a rash occurs: Get medical advice/attention.  
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.  
P310: Immediately call a doctor/physician.  
P362+ P364: Take off contaminated clothing and wash before reuse.  
P405: Store locked up.  
P501: Dispose of contents and container to a licensed chemical disposal agency in accordance with local, regional and national regulations.

### 3. Composition/information on ingredients

Common name	CAS	Weight % content
Sodium hydroxide	1310-73-2	6-8 %
Morpholine	110-91-8	0.5-1 %
Sodium sulfite	7757-83-7	3-4 %
CARBOSPERSE K-702 POLYMER	MIXTURE	0.5-1 %
Sodium Lingnosulfonate	8061-51-6	0.5-1 %

### 4. First-aid measures

<b>Inhalation</b>	Move person to fresh air. If breathing is difficult, give oxygen by trained personnel. If not breathing, give artificial respiration. Do not use mouth-to-mouth resuscitation unless you use a buccal protective device. If a problem develops or persists, seek medical attention.
<b>Skin contact</b>	Flush with water for at least 15 minutes. Remove contaminated clothing and wash before reuse. If a problem develops or persists, seek medical attention.
<b>Eye contact</b>	IMMEDIATELY flush with plenty of water. Remove contact lenses after the first 5 minutes. Flush with water for at least 30 minutes. Hold eyelids apart to rinse properly. Do not rub your eyes. Consult a physician, preferably an ophthalmologist. Do not transport the victim until the recommended flushing period is completed, unless a portable emergency eye wash bottle is immediately available.
<b>Ingestion</b>	DO NOT induce vomiting, unless recommended by medical personnel. If victim is conscious wash out mouth with water and give 1-2 glasses of water to drink. Never give anything by mouth if victim is unconscious or convulsing. If spontaneous vomiting occurs, keep head below hips level to prevent aspiration into the lungs. Seek medical attention or contact a Poison Centre immediately.
<b>Other</b>	No information available.
<b>Symptoms</b>	Causes skin burns and eye damage. May cause an allergic reaction of the skin. Overexposure may cause burns of to nose, throat and respiratory tract.
<b>Notes to the physician</b>	Treat according to person's condition and specifics of exposure. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Probable mucosal damage may contraindicate the use of gastric lavage.

## 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Dried powder, water spray, carbon dioxide (CO <sub>2</sub> ), chemical foam.
<b>Specific hazards arising from the chemical</b>	In a fire or if heated, a pressure increase will occur and the container may burst. During a fire, smoke may contain the original materials in addition to combustion products of varying composition which may be toxic and/or irritating.
<b>Special protective equipment</b>	Firefighting suit may not be efficient against chemicals. Firefighters must wear self contained breathing apparatus with full face mask.
<b>Special protective actions for fire-fighters</b>	Water spray can be used to cool equipment exposed to heat and flame. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply.

## 6. Accidental release measures




<b>Personal precautions, protective equipment and emergency procedures</b>	Do not touch spilled material. Make sure to wear personal protective equipment mentioned in this Safety Data Sheet.
<b>Environmental precautions</b>	Prevent entry in sewer and other enclosed area. For a large spillage, consult the Department of Environment or the relevant authorities.
<b>Methods and materials for containment and cleaning up</b>	Ventilate well the area. Stop leak, if it's possible to do so without risk. Move containers from spill area. Absorb with inert material (soil, sand, vermiculite) or wipe up with a damp mop and place in an appropriate waste disposal clearly identified. Finish cleaning by rinsing with soapy water the contaminated surface. Dispose via a licensed waste disposal contractor.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Use only in well ventilated area. Do not breathe vapors and mists. Avoid all contact with skin, eyes and clothing. Make sure to wear personal protective equipment mentioned in this Safety Data Sheet. Keep containers tightly closed when not used. Do not eat, do not drink and do not smoke during use. Wash hands, forearms and face thoroughly after handling this compound. Remove contaminated clothing and wash before reuse.
<b>Conditions for safe storage, including any incompatibilities</b>	Store tightly closed and in properly labelled container in a dry, cool and well ventilated place. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store away from acids and from incompatible materials (see section 10). Keep away from direct sunlight and heat. Keep off freezing.
<b>Storage temperature</b>	10 to 40°C (50 to 104°F)

## 8. Exposure controls/personal protection

<b>Immediately Dangerous to Life or Health</b>	Sodium hydroxide: 10 mg/m <sup>3</sup> . Morpholine : 1400 ppm.		
Sodium hydroxide	Ceiling	2 mg/m <sup>3</sup> 2 mg/m <sup>3</sup>	ACGIH , BC, ON, RSST TWA (8h) OSHA
Morpholine	TWA (8h)	20 ppm	ACGIH , BC
20 ppm	70 mg/m <sup>3</sup>	ON , OSHA	
20 ppm	71 mg/m <sup>3</sup>	RSST (Pc)	
<b>Appropriate engineering controls</b>	Provide sufficient mechanical ventilation (general and/or local exhaust) to keep the airborne concentrations of vapors, mists, aerosols or dust below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are close to the workstation.		

Individual protection measures	
<b>Eye</b>	Wear chemical splash goggles. Depending on conditions of use, a face shield may be necessary.
<b>Hands</b>	Chemical-resistant, impervious gloves should be worn at all times when handling this chemical product. Wear nitrile or neoprene gloves. Before using, user should confirm impermeability. Discard gloves that show tears, pinholes, or signs of wear. Gloves must only be worn on clean hands. Wash gloves with water before removing them. After using gloves, hands should be washed and dried thoroughly.
<b>Skin</b>	Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Wear an apron or long-sleeve protective coverall suit. To clean up a spill, if necessary, wear a synthetic polyethylene coveralls such as the Tychem (DuPont) or equivalent coveralls manufactured to provide protection against liquid chemical.
<b>Respiratory</b>	Respiratory protection equipment (PPE) must be selected, fitted, maintained and inspected in accordance with regulations and CSA Standard Z 94.4 and approved by NIOSH / MSHA. In case of insufficient ventilation or in confined or enclosed space and for an assigned protection factor (APF) up to 10 times the exposure limit: wear a half mask respirator with appropriate cartridges fitted with P100 filters. For an APF until maximum 100 times of exposure limit, wear a full face respirator mask with appropriate cartridges and P100 filters.
<b>Feet</b>	Wear rubber boots to clean up a spill.
<div style="text-align: center;">    </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <span>Apron</span> <span>Goggles</span> <span>Nitrile gloves</span> </div>	

## 9. Physical and chemical properties

<b>Physical state</b>	Liquid	<b>Flammability</b>	Non-flammable.
<b>Colour</b>	Brown	<b>Flammability limits</b>	N/Ap.
<b>Odour</b>	Slight amine	<b>Flash point</b>	N/Ap.
<b>Odour threshold</b>	N/Av.	<b>Auto-ignition temperature</b>	N/Ap.
<b>pH</b>	11 to 13	<b>Sensibility to electrostatic charges</b>	No
<b>Melting point</b>	5°C (41°F)	<b>Sensibility aux sparks and/or friction</b>	No
<b>Freezing point</b>	5°C (41°F)	<b>Vapour density</b>	N/Av. (Air = 1)
<b>Boiling point</b>	110°C (230°F)	<b>Relative density</b>	1.083 kg/L (Water = 1)
<b>Solubility</b>	Fully soluble in water.	<b>Partition coefficient n-octanol/water</b>	N/Av.
<b>Evaporation rate</b>	N/Av.	<b>Decomposition temperature</b>	N/Av.
<b>Vapour pressure</b>	N/Av.	<b>Viscosity</b>	N/Av.
<b>Percent Volatile</b>	2%	<b>Molecular mass</b>	N/Ap.
N/Av.: Not Available    N/Ap.: Not Applicable    Und.: Undetermined    N/E: Not Established			

## 10. Stability and reactivity

<b>Reactivity</b>	No information available for this product.
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Possibility of hazardous reactions (including polymerizations)</b>	Hazardous polymerization will not occur.
<b>Conditions to avoid</b>	Avoid contact with incompatible materials. Avoid high temperatures and intense heat.
<b>Incompatible materials</b>	Acids, strong oxidizing agents (such as nitric acid, perchloric acid, peroxides, chlorates and perchlorates).
<b>Hazardous decomposition products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. Toxicological information


<b>Numerical measures of toxicity</b>	Sodium hydroxide		Ingestion >140 mg/kg Rat LD50
			Skin 1350 mg/kg Rabbit LD50
	Morpholine	Ingestion 1050 mg/kg Rat	LD50
		Inhalation >24 mg/l/4h Rat	LC50
		Skin 504 mg/kg	Rabbit LD50
	Sodium Lignosulfonate		9.4 mg/l/4h Mouse LC50
			Ingestion >7000 mg/kg Rat LD50
<b>Likely routes of exposure</b>	Skin, eyes, inhalation, ingestion.		
<b>Delayed, immediate and chronic effects</b>	<b>Eye contact</b>	May cause severe eye irritation or eye damage. Undiluted morpholine is corrosive to the eyes of rabbits (OECD TG 405) Eye Irritation/Corrosion, Rabbit: tests performed with each ingredient of this mixture gave from irritating to corrosive results.	
	<b>Skin contact</b>	May cause skin irritation and burns. Severity is generally determined by concentration of solution and duration of contact. Contact with skin may aggravate an existing skin condition. Skin Irritation/Corrosion, Rabbit : tests performed with each ingredient of this mixture gave from mild irritating to corrosive results.	
	<b>Inhalation</b>	Inhalation of vapors or mists can cause severe irritation to nose, throat and respiratory tract. Overexposure may cause cause burns and lungs damages.	
	<b>Ingestion</b>	Harmful if swallowed. May cause burns to mouth, throat and stomach. Swallowing will causes digestive tract disturbances resulting in nausea, vomiting, cramps and diarrhea.	
	<b>Respiratory or skin sensitization</b>	Ingredients present at levels greater or equal to 0.1% of this product are skin or respiratory sensitizers.	
	<b>IRAC/NTP Classification</b>	No ingredients listed.	
	<b>Carcinogenicity</b>	Ingredients present at levels greater than or equal to 0.1% of this product are not listed as a carcinogen by IARC, ACGIH, NIOSH, NTP or OSHA.	
	<b>Mutagenicity</b>	Ingredients in this product present at levels greater than or equal to 0.1% are not known to cause mutagenic effect.	
	<b>Reproductive toxicity</b>	Ingredients in this product present at levels greater than or equal to 0.1% are not known to cause effects on reproduction.	
	<b>Specific target organ toxicity - single exposure</b>	No target organ is listed.	
	<b>Specific target organ toxicity - repeated exposure</b>	Systemic toxicity, digestive system, respiratory system.	

<b>Interactive effects</b>	No information available for this product.
<b>Other information</b>	The oral acute toxicity estimate (ATE) of the mixture was calculated to be greater than 300 mg/Kg but lower than 2000 mg/kg. This value is classified according to GHS: Acute toxicity, oral (Category 4). The skin acute toxicity estimate (ATE) of the mixture was calculated to be greater than 2000 mg/kg. This value is not classified according to WHMIS and OSHA HCS 2012.

## 12. Ecological information


<b>Ecological toxicity</b>	<p>Ceriodaphnia quadrangular</p> <p>Aquatic Invertebrate - Crustaceans - EC50 40 mg/L; 48h (Sodium hydroxide)</p> <p>Fish - Gambusia affinis - fresh water LC50 125 ppm; 96h (Sodium hydroxide)</p> <p>Fish - Oryzias latipes LC50 &gt;100 mg/L; 96h (morpholine) Aquatic Invertebrate - Daphnia Magna, Water flea, fresh water EC50 45 mg/L; 48h (morpholine) Algae, Pseudokirchnerilla subcapitata EC50 51 mg/L; 72h (morpholine)</p> <p>Fish - Leuciscus idus LC50 170-370 mg/L (pH 8) 96 h (sodium sulfite)</p> <p>Aquatic Invertebrate - Daphnia Magna, Water flea, fresh water EC50 118 mg/L; 48 h (sodium sulfite)</p> <p>Aquatic Plant - Chlamydomonas reinhardtii EC50 63-126 mg/L; 96 h (sodium sulfite)</p>
<b>Persistence</b>	No information available for this product.
<b>Degradability</b>	No information available for this product.
<b>Bioaccumulative potential</b>	No information available for this product. Log Kow value of -4 (Sodium sulfite). The inorganic salts of this kind are not expected to accumulate in biota.
<b>Mobility in soil</b>	The Koc of morpholine is estimated as 7.4 using suggests a very high mobility in soil.
<b>Other adverse effects</b>	The observed ecological toxicity presented by this product for the environment was considered a result of pH effects. This chemical does not deplete the ozone layer.

## 13. Disposal considerations

<b>Container</b> 	Important! Prevent waste generation. Use in full. DO NOT throw residual to sewer, streams, sewers or drinking water supply. Residues and empty containers must be considered as hazardous waste. Dispose via a licensed waste disposal contractor. Observe all federal, state/provincial and municipal regulations. If necessary consult the Department of Environment or the relevant authorities.
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## 14. Transport information

<b>UN Number</b>	UN 1760
<b>UN Proper Shipping Name</b>	CORROSIVE LIQUID, N.O.S.(Sodium Hydroxide, Morpholine) Class 8, PG III
<b>Environmental hazards</b>	This material does not contain marine pollutant.

<b>Special precautions for user</b>	Permit required for transportation with proper placards displayed on vehicle.
<b>TDG - Transportation of Dangerous Goods (Canada)</b>	
<b>Transport hazard class(es)</b>	 Class 8
<b>Packing group</b>	III
<b>Emergency response guidebook 2012</b>	154
<b>IMO/IMDG - International Maritime Transport</b>	
<b>Classification</b>	UN 1760. CORROSIVE LIQUID, N.O.S.(Sodium Hydroxide, Morpholine) Class 8, PG III. Emergency
<b>IATA - International Air Transport Association</b>	
<b>Classification</b>	UN 1760. CORROSIVE LIQUID, N.O.S. Sodium Hydroxide,Morpholine)Class 8, PG III.
These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. In addition, if a domestic exemption exists, it is the responsibility of the shipper to define the application of it.	

## CANADA




Common name	CAS	CEPA	DSL	NDSL	NPRI
Sodium hydroxide	1310-73-2		X		
Morpholine	110-91-8		x		

- CEPA: List of Toxic Substances Managed Under Canadian Environmental Protection Act
- DSL: Domestic Substances List Inventory
- NDSL: Non-Domestic Substances List Inventory
- NPRI: National Pollutant Release Inventory Substances

## UNITED STATE OF AMERICA

### UNITED STATE OF AMERICA:

- Toxic Substance Control Act (TSCA) :  
All ingredients are listed in the TSCA Inventory or otherwise comply with TSCA requirements.
- EPCRA Section 313 Toxic Chemicals: No material is listed.
- CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act): No material is listed.
- Clean Water Act (CWA) 311 Hazardous Substances: No material is listed.
- Clean Water Act (CWA) Priority Pollutants: No material is listed.
- Clean Air Act (CAA) 111: Morpholine (CAS no 110-91-8).
- Clean Air Act (CAA 112b) HAP - Hazardous Air Pollutants: No material is listed.
- California Proposition 65: No material is listed.
- CAA 112(r): Clean Air Act - Regulated Chemicals for Accidental Release Prevention
- CWA 311: Clean Water Act - List of Hazardous Substances
- CWA Priority: Clean Water Act - Priority Pollutant list

Other regulations			
	WHMIS 1988 		
Common name	D2B	Cancer	Reproductive and Developmental Toxicity
	Class D2B : Toxic material causing other toxic effects Class E : Corrosive material  <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <b>HMIS</b>   </div> <div style="text-align: center;"> <b>NFPA</b>   </div> </div>		

## 16. Other information

Date (YYYY-MM-DD)	AQUARIAN CHEMICALS INC. 2015-10-01
Version	01
Other information	<p>REFERENCES:</p> <ul style="list-style-type: none"> <li>- Haz-Map, Information on Hazardous Chemicals and Occupational Diseases, <a href="http://hazmap.nlm.nih.gov/index.php">http://hazmap.nlm.nih.gov/index.php</a></li> <li>- Service du répertoire toxicologique de la Commission de la santé et de la sécurité du travail (CSST), <a href="http://www.reptox.csst.qc.ca">http://www.reptox.csst.qc.ca</a></li> <li>- TOXNET Databases, Toxicology Data Network, NIH U.S. National Library of Medicine, <a href="http://toxnet.nlm.nih.gov/">http://toxnet.nlm.nih.gov/</a></li> <li>- OECD Existing Chemicals Database, Chemicals Screening Information DataSet (SIDS) for High Volume Chemicals, UNEP publications, <a href="http://webnet.oecd.org/HPV/UI/Search.aspx">http://webnet.oecd.org/HPV/UI/Search.aspx</a></li> <li>- Database, Institut National de Recherche et de Sécurité, <a href="http://www.inrs.fr/accueil/produits/bdd.html">http://www.inrs.fr/accueil/produits/bdd.html</a></li> <li>- NIOSH Pocket Guide to Chemical Hazards, Centers for Disease Control and Prevention, NIOSH Publications, 2007, <a href="http://www.cdc.gov/niosh/npg/npg.html">http://www.cdc.gov/niosh/npg/npg.html</a></li> </ul> <p>ACGIH: American Conference of Governmental Industrial Hygienists            AIHA: American Industrial Hygiene Association            HMIS: Hazardous Materials Identification System            NFPA: National Fire Protection Association            OSHA: Occupational Safety and Health Administration (USA)            NIOSH: National Institute for Occupational Safety and Health            NTP: National Toxicology Program            RSST: Règlement sur la santé et la sécurité du travail (Québec)            GHS: Globally Harmonized System            IARC: International Agency for Research on Cancer            IDLH: Immediately Dangerous to Life or Health            STEL: Short Term Exposure Limit (15 min)            TWA: Time Weighted Averages</p>



## WHMIS: Workplace Hazardous Materials Information System

To the best of our knowledge, the information contained herein is accurate. However, neither Préventis System nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.