

Aquamine 415

SECTION 1. IDENTIFICATION

Product Identifier	Aquamine 415
Other Means of Identification	Amine Blend
Recommended Use	Boiler Condensate Treatment.
Restrictions on Use	None known.
Manufacturer/Supplier Identifier	Alliance Water Group Inc., 1 Yonge Street, Suite 1801, Toronto, ON, MSE 1W7, 416-306-2480
Emergency Phone No.	CANUTEC, 613-996-6666, 24 Hour Emergency Line
Date of Preparation	May 05, 2017

SECTION 2. HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).

Classification

Flammable liquid - Category 3; Acute toxicity (Oral) - Category 4; Acute toxicity (Dermal) - Category 5; Skin corrosion - Category 1; Serious eye damage - Category 1; Reproductive toxicity - Category 2; Aquatic hazard (Acute) - Category 3

Label Elements



Signal Word:

Danger

Hazard Statement(s):

- H226 Flammable liquid and vapour.
- H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage.
- H361 Suspected of damaging fertility or the unborn child.
- H402 Harmful to aquatic life.

Precautionary Statement(s):

Prevention:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe dusts or mists.
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P233 Keep container tightly closed.
- P264 Wash hands and skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

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Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice or attention.

P310 Immediately call a POISON CENTRE or doctor.

P363 Wash contaminated clothing before reuse.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal:

P501 Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers	Other Names
Cyclohexylamine	108-91-8	5-15	NDA	
Morpholine	110-91-8	5-15	NDA	
2-(Diethylamino)ethanol	100-37-8	5-15	NDA	

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. Keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor.

Avoid mouth-to-mouth contact by using a barrier device. Get medical advice or attention if you feel unwell or are concerned.

Skin Contact

Avoid direct contact. Wear chemical protective clothing if necessary. Quickly and gently blot or brush away excess chemical. Immediately rinse skin with lukewarm, gently flowing water for at least 30 minutes. Get medical advice or attention if you feel unwell or are concerned. Call a Poison Centre or doctor if you feel unwell. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

Eye Contact

Avoid direct contact. Wear chemical protective gloves if necessary. Quickly and gently blot or brush chemical off the face. Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes, while holding the eyelid(s) open. Remove contact lenses, if present and easy to do. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately call a Poison Centre or doctor.

Ingestion

Rinse mouth with water. Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. If vomiting occurs naturally, lie on your side in the recovery position. Rinse mouth with water again. Avoid mouth-to-mouth contact by using a barrier device. Immediately call a Poison Centre or doctor.

First-aid Comments

If medical advice is needed, have product container or label at hand. Consideration should be given to the possibility that over exposure to materials other than this product may have occurred.

Most Important Symptoms and Effects, Acute and Delayed

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None known.

Immediate Medical Attention and Special Treatment

Target Organs

No data available.

Special Instructions

If medical advice is needed, have product container at hand. Consideration should be given to the possibility that over-exposure to materials other than this product may have occurred.

Medical Conditions Aggravated by Exposure

None known.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use CO2, dry powder or alcohol resistant foam.

Unsuitable Extinguishing Media

Do not use water jet.

Specific Hazards Arising from the Product

None known.

Special Protective Equipment and Precautions for Fire-fighters

Use extreme caution. Evacuate area. Fight fire from a safe distance or a protected location. Approach fire from upwind to avoid hazardous vapours or gases. For a massive fire, immediately evacuate the area and use unmanned hose holder or monitor nozzles. Use water spray to dilute spills to non-flammable mixtures. Use water spray to flush spills away from ignition sources. Do NOT apply water directly to spill. If the leak cannot be stopped, let the fire burn itself out. Knock down vapours or gases with water fog or fine water spray. Before entry, especially into confined areas, use an appropriate monitor to check for: toxic gases or vapours, flammable or explosive atmosphere, sufficient oxygen. Dike and recover contaminated water for appropriate disposal. Review Section 6 (Accidental Release Measures) for important information on responding to leaks/spills.

Fire-fighters should enter area wearing specialized protective equipment. (Bunker Gear will not provide adequate protection.) a full-body encapsulating chemical protective suit with positive pressure SCBA may be necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Evacuate downwind locations. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Increase ventilation to area or move leaking container to a well-ventilated and secure area. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Remove or isolate incompatible materials as well as other hazardous materials. Before entry, especially into confined areas, check atmosphere with an appropriate monitor. Monitor area for flammable or explosive atmosphere. Test for sufficient oxygen levels.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas. Minimize the use of water to prevent environmental contamination.

Methods and Materials for Containment and Cleaning Up

Review Section 7 (Handling) of this safety data sheet before proceeding with clean-up. Small spills or leaks: stop or reduce leak if safe to do so. Contain and soak up spill with absorbent that does not react with spilled product. Do not use absorbents. Contain spill using noncombustible material such as vermiculite, earth or sand. Do NOT use combustible materials such as sawdust. Cover the spill surface with the appropriate type of foam to reduce the release of vapour. Place used absorbent into suitable, covered, labelled containers for disposal. Contaminated absorbent poses the same hazard as the spilled product. Large spills or leaks: dike spilled product to prevent runoff. Knock down vapour

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with fog or fine water spray. Do not direct water at spill or source. Remove or recover liquid using pumps or vacuum equipment. Flush spill area. Dike and recover contaminated water for appropriate disposal. If spills occur on wooden floor or other combustible material, flush with large quantities of water. Get expert advice before treating the spilled product with other chemicals to make it less hazardous. Store recovered product in suitable containers that are tightly-covered. Review Section 13 (Disposal Considerations) of this safety data sheet. Contact emergency services and manufacturer/supplier for advice.

Other Information

Report spills to local health, safety and environmental authorities, as required.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Obtain special instructions before use. Avoid breathing in this product. Do not get in eyes, on skin or on clothing. Do not swallow. Avoid exposure during pregnancy and while nursing. Only use where there is adequate ventilation. Avoid generating vapours or mists. Prevent uncontrolled release of product. Avoid release to the environment. Immediately report leaks, spills or failures of the safety equipment (e.g. ventilation system). In the event of a spill or leak, exit the area immediately. Eliminate heat and ignition sources such as sparks, open flames, hot surfaces and static discharge. Post "No Smoking" signs. Do not spray on an open flame or other ignition source. Do not pierce or burn container, even after use. If product is transferred to another container, ensure new container is suitable for the product. Prevent accidental contact with incompatible chemicals. Wear personal protective equipment to avoid direct contact with this chemical. Avoid repeated or prolonged skin contact with product or with contaminated equipment/surfaces. Prevent contamination of surfaces that unprotected personnel may use. Keep containers tightly closed when not in use or empty. Never reuse empty containers, even if they appear to be clean. General hygiene considerations: it is good practice to: avoid breathing product; avoid skin and eye contact and wash hands after handling. Do NOT smoke in work areas. Do NOT eat, drink or store food in work areas. Remove contaminated clothing and protective equipment before entering eating areas or leaving work area. Wash hands thoroughly after handling this product and before eating, using the washroom or leaving work area. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely. Do not take contaminated clothing home. Properly dispose of any contaminated items, including shoes, that cannot be decontaminated. DO NOT re-use. See Section 13 (Disposal Considerations) of this safety data sheet.

Conditions for Safe Storage

Store in an area that is: cool, dry, well-ventilated, out of direct sunlight and away from heat and ignition sources, an approved, fire-resistant area, secure and separate from work areas, separate from incompatible materials (see Section 10: Stability and Reactivity). Store in the original, labelled, shipping container. Protect from conditions listed in Conditions to Avoid in Section 10 (Stability and Reactivity). Store in a closed container. Store in corrosive resistant container with a resistant inner liner. Do not handle swollen drums. Get expert advice. Empty containers may contain hazardous residue. Store separately. Keep closed. Follow all precautions given on this safety data sheet. Comply with all applicable health and safety regulations, fire and building codes.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Not available.

Consult local authorities for provincial or state exposure limits.

Appropriate Engineering Controls

General ventilation is usually adequate. For large scale use of this product: use local exhaust ventilation and enclosure, if necessary, to control amount in the air. Exhaust directly to the outside, taking any necessary precautions for environmental protection. Provide eyewash and safety shower if contact or splash hazard exists.

Individual Protection Measures

Eye/Face Protection

Use proper protective equipment. Wear safety goggles and protective gloves when handling this product. Avoid dermal exposure. In case of insufficient ventilation, or if exposure limits are exceeded or symptoms are experienced, use a NIOSH/MSHA approved respirator. Always handle product in accordance with good industrial hygiene and safety practice.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

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Neoprene rubber, nitrile rubber, polyvinyl chloride.

Respiratory Protection

Not usually required when working with small quantities. Wear a NIOSH approved particulate respirator equipped with an N95, R95, or P95 filter.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Colourless liquid.
Odour	Ammonia-like
Odour Threshold	Not available
pH	12.5
Melting Point/Freezing Point	Not applicable (melting); < 0 °C (freezing)
Initial Boiling Point/Range	98 °C
Flash Point	60 °C
Evaporation Rate	Not available
Flammability (solid, gas)	Not applicable (liquid).
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	18 mm Hg
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	0.99
Solubility	Soluble in water; Not available (in other liquids)
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	Not available (kinematic); Not available (dynamic)
Other Information	
Physical State	Liquid

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Normally stable. Unstable under certain conditions - see Conditions to Avoid.

Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

Conditions to Avoid

None known.

Incompatible Materials

None known.

Hazardous Decomposition Products

None known.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

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Eye contact; ingestion; skin contact.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Cyclohexylamine	7500 mg/m ³ (rat)	300 mg/kg (rat)	277 mg/kg (rabbit)
Morpholine	8 mg/L (rat) (4-hour exposure)	500 mg/kg (rat)	1910 mg/kg (rabbit)
2-(Diethylamino)ethanol	4.6 mg/L (rat) (4-hour exposure)	1320 mg/kg (rat)	1000 mg/kg (rabbit)

LC50: No information was located.

LD50 (Oral): >2000mg/kg (Aquamine 415)

LD50 (Dermal): 2431mg/kg (Aquamine 415)

Skin Corrosion/Irritation

Human experience and animal tests show skin corrosion. Contact can cause pain, redness, burns, and blistering. Permanent scarring can result.

Serious Eye Damage/Irritation

Human experience and animal tests show serious eye damage. Contact causes severe burns with redness, swelling, pain and blurred vision. Permanent damage including blindness can result. The vapour also irritates the eyes.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

May cause nose and throat irritation. Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest.

Skin Absorption

No information was located.

Ingestion

Causes severe irritation or burns to the mouth, throat and stomach. Symptoms may include nausea, vomiting, stomach cramps and diarrhea.

Aspiration Hazard

No information was located.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

No information was located.

Respiratory and/or Skin Sensitization

No information was located.

Carcinogenicity

No information was located.

Reproductive Toxicity

Sexual Function and Fertility

May cause effects on sexual function and/or fertility. Conclusions cannot be drawn from the limited studies available.

No information was located for: Aspiration Hazard, Respiratory and/or Skin Sensitization, Development of Offspring, Effects on or via Lactation, Germ Cell Mutagenicity, Interactive Effects

SECTION 12. ECOLOGICAL INFORMATION

This section is not required by WHMIS.

Ecotoxicity

No information was located.

Acute Aquatic Toxicity

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Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Cyclohexylamine	33 (Lepomis macrochirus (bluegill); 96-hour)	36 mg/L (Daphnia magna (water flea); 48-hour)	Not available	20 mg/L (Pseudokirchneriella subcapitata (algae); 96-hour)
Morpholine	180-380 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour)	45 mg/L (Daphnia magna (water flea); 48-hour)	10-28 mg/L (Pseudokirchneriella subcapitata (algae); 96-hour)	Not available
2-(Diethylamino)ethanol	100-220 mg/L (Pimephales promelas (fathead minnow); 96-hour; static)	83.6 mg/L (Daphnia magna (water flea); 48-hour)	Not available	30 mg/L (Desmodesmus subspicatus (algae); 72-hour)

Chronic Aquatic Toxicity

Chemical Name	NOEC Fish	EC50 Fish	NOEC Crustacea	EC50 Crustacea
Cyclohexylamine	Not available	Not available	Not available	Not available
Morpholine	Not available	Not available	5 mg/L (Daphnia magna (water flea); 21-day)	Not available
2-(Diethylamino)ethanol	Not available	Not available	Not available	Not available

Persistence and Degradability

No information was located.

Bioaccumulative Potential

No information was located.

Mobility in Soil

No information was located.

Other Adverse Effects

There is no information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of waste in accordance with local, regional, national, and/or international regulations. Recommended disposal methods are for the product, as sold. (Used material may contain other hazardous contaminants).

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
US DOT	2734	AMINES, CORROSIVE LIQUID, FLAMMABLE (CYCLOHEXYLAMINE, MORPHOLINE)	8 (3)	II
Canadian TDG	2734	AMINES, CORROSIVE LIQUID, FLAMMABLE (Cyclohexylamine, Morpholine, Diethanolamine)	8 (3)	II

Environmental Hazards

Potential Marine Pollutant

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

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Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

This section is not required by WHMIS.

Canada

WHMIS 1988 Classification



Class B3



Class D2B



Class E

B3 - Combustible Liquid; D2B - Toxic; E - Corrosive

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL or are not required to be listed.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.

SECTION 16. OTHER INFORMATION

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Revision Indicators The following SDS content was changed on May 08, 2017:
Section 11 - Toxicological Information; LC50/LD50 values.

Key to Abbreviations NIOSH = National Institute for Occupational Safety and Health
OSHA = US Occupational Safety and Health Administration
IARC = International Agency for Research on Cancer
ACGIH® = American Conference of Governmental Industrial Hygienists
NDA = No Data Available.

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