Safety Data Sheet: CHEM-AQUA 18104

Supercedes Date 07/30/2015 **Issuing Date** 10/24/2017

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name CHEM-AQUA 18104
Recommended use Water treatment chemical
Information on Manufacturer
CHEM-AQUA, INC
BOX 152170
IRVING, TEXAS 75015

Product Code 0879
Chemical nature Amines solution
Emergency Telephone Number
CHEMTREC® 800-424-9300
Telephone inquiry
972-579-2477

2. HAZARD IDENTIFICATION

Color Colorless - Light yellow **Physical state** Liquid **Odor** Fishy ammonia

GHS Classification

Physical Hazards

Flammable liquids	Category 3
Corrosive to metals	Category 1

Health Hazard

Acute Inhalation Toxicity - Gas	Category 4
Acute Inhalation Toxicity - Vapors	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin Corrosion/Irritation	Category 1
Serious Eye Damage/Eye Irritation	Category 1
Reproductive Toxicity	Category 2

Other hazards
None

Labeling
Signal Word
DANGER

Hazard statements
H226 - Flammable liquid and vapor
H314 - Causes severe skin burns and eye damage
H332 - Harmful if inhaled
H361 - Suspected of damaging fertility or the unborn child
H290 - May be corrosive to metals

Precautionary Statements
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, sparks, open flames or hot surfaces.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical, ventilating and lighting equipment
P243 - Take precautionary measures against static discharge
P242 - Use only non-sparking tools
P280 - Wear protective gloves, protective clothing, eye protection and face protection.
P264 - Wash face, hands and any exposed skin thoroughly after handling.
P260 - Do not breathe mist and vapor.
P271 - Use in a well-ventilated area.
P270 - Do not eat, drink or smoke when using this product.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P363 - Wash contaminated clothing before reuse.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a physician.
P304 + P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P342 + P311 - If experiencing respiratory symptoms, call a physician.
P301+ P330 + P331 - IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. Call a physician if unwell.
P403 + P235 - Store in a well-ventilated place. Keep cool.
P406 - Store in a corrosion-resistant container.

P390 - Absorb spillage to prevent damage.
P501 - Dispose of contents and container in accordance with applicable local regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No.	Weight %
2-Diethylaminoethanol	100-37-8	10-30
Cyclohexylamine	108-91-8	7-13
Morpholine	110-91-8	7-13

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

General advice Do not get in eyes, on skin or on clothing. Do not breathe vapors or spray mist.
Eye Contact Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention immediately.
Skin Contact Remove immediately all contaminated clothing. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately.
Inhalation Move to fresh air. In case of shortness of breath, give oxygen. If breathing has stopped, apply artificial respiration. Get medical attention immediately.
Ingestion Rinse mouth. Drink 1 or 2 glasses of water. Do NOT induce vomiting. Get medical attention immediately. Never give anything by mouth to an unconscious person.
Notes to physician The product causes burns of eyes, skin and mucous membranes. Control of circulatory system, shock therapy if needed.

5. FIRE-FIGHTING MEASURES

Flash Point 138 °F / 59 °C **Method** Pensky Marten Closed Tester
Flammability Limits in Air %: Mixture. **Upper:** 12 **Lower:** 1.5
Suitable Extinguishing Media
Water spray. Carbon dioxide (CO2). Foam. Dry chemical. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Specific hazards arising from the chemical
Flammable. Solvent vapors are heavier than air and may spread along floors. Vapors may ignite and explode. Material can create slippery conditions.
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, NOHSC (approved or equivalent) and full protective gear.

NFPA	**Health** 3	**Flammability** 2	**Instability** 0
HMIS -	**Health** 3	**Flammability** 2	**Instability** 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment. Remove all sources of ignition. Ensure adequate ventilation. Prevent further leakage or spillage if safe to do so. Material can create slippery conditions.
Environmental Precautions Do not flush into surface water or sanitary sewer system.
Methods for Containment Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).
Methods for Cleaning Up Use clean non-sparking tools to collect absorbed material. Pick up and transfer to properly labeled containers.
Neutralizing Agent Acetic acid, diluted.

7. HANDLING AND STORAGE

Handling Do not get in eyes, on skin or on clothing. Do not breathe vapors or spray mist.
Storage Keep away from heat and sources of ignition. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Metal containers must be lined. Freezing will affect the physical condition but will not damage the material. Thaw and mix before using.

Storage Temperature	**Minimum**	36 °F / 2 °C		**Maximum**	120 °F / 49 °C		
Storage Conditions	**Indoor**	X	**Outdoor**		**Heated**		**Refrigerated**

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH
2-Diethylaminoethanol	TWA: 2 ppm Skin	TWA: 10 ppm TWA: 50 mg/m^3 Skin	100 ppm TWA: 10 ppm TWA: 50 mg/m^3
Cyclohexylamine	TWA: 10 ppm	No data available	TWA: 10 ppm TWA: 40 mg/m^3
Morpholine	TWA: 20 ppm Skin	TWA: 20 ppm TWA: 70 mg/m^3 Skin	1400 ppm STEL 30 ppm STEL 105 mg/m^3 TWA: 20 ppm TWA: 70 mg/m^3

Engineering Measures Ensure adequate ventilation, especially in confined areas. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction.

Personal Protective Equipment

Eye/Face Protection Tightly fitting safety goggles. Face-shield.

Skin Protection Wear suitable protective clothing, Impervious gloves.

Respiratory Protection In case of insufficient ventilation wear suitable respiratory equipment. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

General Hygiene Considerations Wear protective gloves/clothing. Ensure that eyewash stations and safety showers are close to the workstation location. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid	**Viscosity**	Non viscous
Color	Colorless - Light yellow	**Odor**	Fishy ammonia
Odor Threshold	Not applicable	**Appearance**	Transparent
pH	12.6	**Specific Gravity**	0.990
Evaporation Rate	0.54 (Butyl acetate=1)	**Percent Volatile (Volume)**	100
VOC Content (%)	40	**VOC Content (g/L)**	396
Vapor Pressure	16.43 mmHg @ 70°F	**Vapor Density**	0.7 (Air = 1.0)
Solubility	Completely soluble	**n-Octanol/Water Partition**	No data available
Melting Point/Range	No data available	**Decomposition Temperature**	No data available
Boiling Point/Range	210 °F / 99 °C	**Flammability (solid, gas)**	No data available
Flash Point	138 °F / 59 °C	**Method**	Pensky Marten Closed Tester
Autoignition Temperature	No information available.		
Flammability Limits in Air %:	Mixture	**Upper:** 12 **Lower:** 1.5	

10. STABILITY AND REACTIVITY

Chemical Stability Stable. Hazardous polymerization does not occur.

Conditions to Avoid Keep away from open flames, hot surfaces, and sources of ignition.

Incompatible Products Strong oxidizing agents, Strong acids, Organic materials, Metals, Nitrous acid and other nitrosating agents, Contact with metals liberates hydrogen gas.

Decomposition Temperature No data available

Hazardous Decomposition Products Carbon oxides, Nitrogen oxides (NOx), Ammonia, Aldehydes, Hydrocarbons, Ketones, Hydrogen, by reaction with metals.

Possibility of Hazardous Reactions None under normal processing.

11. TOXICOLOGICAL INFORMATION

Product Information No information available.

The following values are calculated based on chapter 3.1 of the GHS document

Oral LD50 No information available

Dermal LD50 No information available

Inhalation LC50

Gas No information available

Mist No information available

Vapor No information available

Principle Route of Exposure Skin contact, Eye contact, Inhalation.

Primary Routes of Entry Skin contact, Skin Absorption.

Acute Effects:

Eyes Corrosive to the eyes and may cause severe damage including blindness.

Skin Causes skin burns.

Inhalation Causes burns. Harmful by inhalation.

Ingestion If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Chronic Toxicity Liver and kidney injuries may occur. Inhaled corrosive substances can lead to a toxic edema of the lungs. Repeated or prolonged exposure may cause central nervous system damage. Contains a known or suspected reproductive toxin.

Target Organ Effects Central nervous system, Liver, Kidney, Respiratory system, Eyes, Skin.

Aggravated Medical Conditions Kidney disorders, Skin disorders, Neurological disorders, Respiratory disorders, Liver disorders.

Component Information

Acute Toxicity

Component	Oral LD50	Dermal LD50	Inhalation LC50	Draize Test	Other
2-Diethylaminoethanol 100-37-8	= 1320 mg/kg (Rat)	= 1 mL/kg (Rabbit)	No data available	No data available	No data available
Cyclohexylamine 108-91-8	= 156 mg/kg (Rat)	= 277 mg/kg (Rabbit)	= 1000 ppm (Rat) 16 h	No data available	No data available
Morpholine 110-91-8	= 1050 mg/kg (Rat)	310 - 810 mg/kg (Rabbit)	= 8 mg/l (Rat) 4 h	No data available	No data available

Component	Mutagenicity	Sensitization	Developmental Toxicity	Reproductive Toxicity	Target Organ Effects
2-Diethylaminoethanol 100-37-8	No data available	No data available	No data available	No data available	Skin; Eyes; Respiratory system
Cyclohexylamine 108-91-8	No data available	No data available	No data available	Yes	Skin; Central nervous system; Eyes; Respiratory system
Morpholine 110-91-8	No data available	No data available	No data available	X	Skin; Eyes; Respiratory system; Liver; Kidney

Carcinogenicity

Component	ACGIH	IARC	NTP	OSHA	Other
Cyclohexylamine 108-91-8	not applicable	Group 3	not applicable	not applicable	not applicable
Morpholine 110-91-8	not applicable	Group 3	not applicable	not applicable	not applicable

12. ECOLOGICAL INFORMATION

Product Information

Toxicity to fish
Pimephales promelas (fathead minnow) 72 hour algae value 330.1 mg/L 96h

Component Information

Component	Toxicity to Algae	Toxicity to Fish	Microtox	Crustacea	Partition coefficien
2-Diethylaminoethanol	EC50 = 30 mg/L Desmodesmus subspicatus 72 h	LC50 1660 - 1920 mg/L Pimephales promelas 96 h	No information available	83.6: 48 h Daphnia magna Straus mg/L EC50	0.21
Cyclohexylamine	EC50 = 20 mg/L Pseudokirchneriella subcapitata 96 h	LC50 44 - 90 mg/L Oncorhynchus mykiss 96 h LC50 = 470 mg/L Brachydanio rerio 96 h	EC50 = 120 mg/L 30 min	49: 24 h Daphnia magna mg/L EC50	1.2
Morpholine	EC50 = 28 mg/L Pseudokirchneriella subcapitata 96 h	LC50 = 350 mg/L Lepomis macrochirus 96 h LC50 375 - 460 mg/L Oncorhynchus mykiss 96 h LC50 > 1000 mg/L Brachydanio rerio 96 h	EC50 = 57.0 mg/L 30 min	No information available.	-2.55

Persistence and Degradability No information available.

Bioaccumulation No information available.

Mobility No information available.

13. DISPOSAL CONSIDERATIONS

Product Disposal Dispose of in accordance with local regulations.

Container Disposal Empty containers should be taken for local recycling, recovery, or waste disposal.

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name Corrosive liquids, flammable, n.o.s.

Hazard Class 8

Subsidiary Hazard Class 3

UN-No UN2920
Packing Group II
Description UN2920, Corrosive liquids, flammable, n.o.s.,(Morpholine, Cyclohexylamine),8(3),PG II

TDG
Proper shipping name Corrosive liquids, flammable, n.o.s.
Hazard Class 8
Subsidiary Hazard Class 3
UN-No UN2920
Packing Group II
Description UN2920, Corrosive liquids, flammable, n.o.s.,(Morpholine, Cyclohexylamine),8(3),PG II

ICAO
UN-No UN2920
Proper Shipping Name Corrosive liquids, flammable, n.o.s.
Hazard Class 8
Subsidiary Hazard Class 3
Packing Group II
Shipping Description UN2920, Corrosive liquids, flammable, n.o.s.,(Morpholine, Cyclohexylamine),8(3),PG II

IATA
UN-No UN2920
Proper Shipping Name Corrosive liquids, flammable, n.o.s.
Hazard Class 8
Subsidiary hazard class 3
Packing Group II
ERG-Code 8L
Shipping Description UN2920, Corrosive liquids, flammable, n.o.s.,(Morpholine, Cyclohexylamine),8(3),PG II

IMDG/IMO
Proper Shipping Name Corrosive liquids, flammable, n.o.s.
Hazard Class 8
Subsidiary Hazard Class 3
UN-No UN2920
Packing Group II
EmS No. F-A, S-B
Description UN2920, Corrosive liquids, flammable, n.o.s.,(Morpholine, Cyclohexylamine),8(3),PG II

15. REGULATORY INFORMATION

Inventories
TSCA Complies
DSL Complies

U.S. Federal Regulations

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 Hazardous Categorization

Acute Health Hazard	Chronic Health Hazard	Fire Hazard	Sudden Release of Pressure Hazard	Reactive Hazard
Yes	Yes	Yes	No	No

CERCLA

Component	Hazardous Substances RQs	CERCLA EHS RQs
Cyclohexylamine	Not applicable	10000 lb TPQ 10000 lb

U.S. State Regulations
California Proposition 65 This product contains the following Proposition 65 chemicals:

Component	CAS No.	California Prop. 65
2-Methoxyethanol	109-86-4	developmental toxicity male reproductive toxicity

16. OTHER INFORMATION

Prepared By Adrienne McKee

Supercedes Date	07/30/2015
Issuing Date	10/24/2017
Reason for Revision	No information available.
Glossary	No information available.
List of References.	No information available.

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