

Safety Data Sheet: CHEM-AQUA 84R

Supersedes Date 02/10/2014

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1. PRODUCT AND COMPANY IDENTIFICATION

Product Name CHEM-AQUA 84R
Recommended use Water treatment chemical
Information on Manufacturer
CHEM-AQUA, INC
BOX 152170
IRVING, TEXAS 75015

Product Code 859C
Chemical nature Amine blend
Emergency Telephone Number
CHEMTREC® 800-424-9300
Telephone inquiry
972-579-2477

2. HAZARD IDENTIFICATION

Color Colorless - Light yellow

Physical State Liquid

Odor Strong Ammoniacal

GHS

Classification

Physical Hazards

Flammable liquids
Substances/mixtures corrosive to metal

Category 4
Category 1

Health Hazard

Acute Oral Toxicity
Acute Dermal Toxicity
Skin Corrosion/Irritation
Serious Eye Damage/Eye Irritation
Respiratory Sensitization
Skin Sensitization
Reproductive Toxicity
Specific target organ systemic toxicity (single exposure)
Specific target organ systemic toxicity (repeated exposure)

Category 3
Category 4
Category 1
Category 1
Category 1
Category 1
Category 2
Category 3
Category 2

Other hazards

None

Labeling

Signal Word

DANGER



Hazard Statements

H227 - Combustible liquid
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H312 - Harmful in contact with skin
H336 - May cause drowsiness or dizziness
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H301 - Toxic if swallowed
H361 - Suspected of damaging fertility or the unborn child
H373 - May cause damage to organs through prolonged or repeated exposure
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.
P280 - Wear protective gloves, protective clothing, eye protection and face protection.
P264 - Wash face, hands and any exposed skin thoroughly after handling.
P272 - Contaminated work clothing should not be allowed out of the workplace
P260 - Do not breathe vapor or mist
P271 - Use in a well-ventilated area.
P285 - In case of inadequate ventilation wear respiratory protection
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
P333 + P313 - If skin irritation or rash occurs, get medical attention
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 + P233 - Store in a well-ventilated place. Keep container tightly closed
P235 - 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 regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Morpholine	110-91-8	10-30
Cyclohexylamine	108-91-8	5-10

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	Wash off immediately with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention if irritation develops and persists. Wash contaminated clothing before re-use.
Inhalation	Move to fresh air. In case of shortness of breath, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.
Ingestion	Drink 1 or 2 glasses of water. Do NOT induce vomiting. Get medical attention immediately. Never give anything by mouth to an unconscious person. Rinse mouth.
Notes to physician	The product causes burns of eyes, skin and mucous membranes. Control of circulatory system, shock therapy if needed. May cause sensitization of susceptible persons.

5. FIRE-FIGHTING MEASURES

Flash Point	145 °F / 63 °C	Method	Seta closed cup
Flammability Limits in Air % Mixture.		Upper	1.4
Suitable Extinguishing Media		Lower	75
Dry chemical. Carbon dioxide (CO ₂). Water spray. Foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.			
Specific hazards arising from the chemical			
Solvent vapors are heavier than air and may spread along floors. Vapors may ignite and explode. Material can create slippery conditions. Contact with metals may evolve flammable hydrogen gas.			
Protective Equipment and Precautions for Firefighters			
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.			
NFPA	Health 3	Flammability	2
HMIS	Health 3	Flammability	2
		Instability	0
		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 open flames, hot surfaces and sources of ignition. Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Freezing will affect the physical condition but will not damage the material. Thaw and mix before using.
Storage Temperature	Minimum 35 °F / 2 °C
Storage Conditions	Indoor X Outdoor Maximum 120 °F / 49 °C
	Heated Refrigerated

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH
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
Cyclohexylamine	TWA: 10 ppm	No data available	TWA: 10 ppm TWA: 40 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 inadequate ventilation wear respiratory protection. 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	Strong Ammoniacal
Odor Threshold	Not applicable	Appearance	Transparent
pH	12.7	Specific Gravity	1.0
Evaporation Rate	0.61	Percent Volatile (Volume)	100
VOC Content (%)	28.2	VOC Photoreactive (Y/N)	Yes
VOC Content (g/L)	285	Vapor Pressure	16.6 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	219 °F / 104 °C
Flammability (solid, gas)	No data available		
Flash Point	145 °F / 63 °C	Method	Seta closed cup
Autoignition Temperature	No information available.		
Flammability Limits in Air %	Mixture.	Upper 1.4 Lower 75	

10. STABILITY AND REACTIVITY

Chemical Stability	Stable. Hazardous polymerization does not occur.
Conditions to Avoid	Heat, flames, and sparks
Incompatible Products	Acids, Strong oxidizing agents, Nitrites, Copper, Copper alloys, Metals.
Hazardous Decomposition Products	Carbon oxides, Nitrogen oxides (NOx), Nitriles.
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 (Rev. 3, 2009):

Oral LD50	134.61
Dermal LD50	1,530.09
Inhalation LC50	
Gas	No information available
Mist	99,999.00
Vapor	99,999.00

Principle Route of Exposure

Skin contact, Eye contact, Inhalation.

Primary Routes of Entry

Skin Absorption, Inhalation.

Acute Effects**Eyes**

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

Skin

Causes skin burns. May cause allergic skin reaction.

Inhalation

Harmful by inhalation. Causes burns. May cause allergic respiratory reaction. Inhalation may cause central nervous system effects. May cause central nervous system depression. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Ingestion

If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach. Aspiration hazard if swallowed - can enter lungs and cause damage.

Chronic Toxicity	May be fatal if swallowed. Inhaled corrosive substances can lead to a toxic edema of the lungs. Liver and kidney injuries may occur. Suspect reproductive hazard - contains material which may injure unborn child. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. May cause skin sensitization in some individuals. May cause respiratory sensitization in some individuals.
Target Organ Effects	Central nervous system, Kidney, Liver, Respiratory system, Blood, Heart, Skin, Eyes, Immune system.
Aggravated Medical Conditions	Neurological disorders, Central nervous system, Kidney disorders, Liver disorders, Heart disease, Blood disorders, Skin disorders, Respiratory disorders.

Component Information

Acute Toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation	Draize Test	Other
Morpholine	= 1050 mg/kg (Rat)	310 - 810 mg/kg (Rabbit)	= 8000 ppm (Rat) 8 h	no data available	no data available
Cyclohexylamine	= 156 mg/kg (Rat)	= 277 mg/kg (Rabbit)	= 1000 ppm (Rat) 16 h	no data available	no data available

Component	Mutagenicity	Sensitization	Developmental Toxicity	Reproductive Toxicity	Target Organ Effects
Morpholine	no data available	no data available	no data available	no data available	eyes, kidneys, liver, respiratory system, skin, CNS
Cyclohexylamine	no data available	skin sensitization, respiratory sensitization	no data available	Yes	eyes, CNS, respiratory system, skin, immune system, blood, heart, liver, kidney

Carcinogenicity

There are no known carcinogenic chemicals in this product.

Component	ACGIH	IARC	NTP	OSHA	Other
Morpholine	not applicable	Group 3	not applicable	not applicable	not applicable
Cyclohexylamine	not applicable	Group 3	not applicable	not applicable	not applicable

12. ECOLOGICAL INFORMATION

Product Information

No information available.

Component Information

Component	Toxicity to Algae	Toxicity to Fish	Microtox	Water Flea	log Pow
Morpholine	EC50 = 28 mg/L Pseudokirchneriella subcapitata 96 h	LC50 375 - 460 mg/L Oncorhynchus mykiss 96 h LC50 = 350 mg/L Lepomis macrochirus 96 h LC50 > 1000 mg/L Brachydanio rerio 96 h	EC50 = 57.0 mg/L 30 min	no data available	-2.55
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	no data available	1.2

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, n.o.s.
Hazard Class	8
UN-No	UN1760
Packing Group	II
Description	Corrosive liquids, n.o.s., (Morpholine,Cyclohexylamine),8,UN1760,PG II

TDG

Proper shipping name	Corrosive liquid, n.o.s
Hazard Class	8

UN-No UN1760
Packing Group II

ICAO

UN-No UN1760
Proper Shipping Name Corrosive liquid, n.o.s.
Hazard Class 8
Packing Group II
Shipping Description Corrosive liquid, n.o.s.*(Morpholine,Cyclohexylamine),8,UN1760,PG II,Mixture

IATA

UN-No UN1760
Proper Shipping Name Corrosive liquid, n.o.s.
Hazard Class 8
Packing Group II
ERG Code 8L
Shipping Description UN1760,Corrosive liquid, n.o.s.*(Morpholine,Cyclohexylamine),8,PG II

IMDG/IMO

Proper Shipping Name Corrosive liquid, n.o.s.
Hazard Class 8
UN-No UN1760
Packing Group II
EmS No. F-A, S-B
Shipping Description UN1760, Corrosive liquid, n.o.s.(Morpholine,Cyclohexylamine),8,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

16. OTHER INFORMATION

Prepared By Sarah Williamson
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Reason for Revision No information available.
Glossary No information available.
List of References. No information available.

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