

Safety Data Sheet NA-104C

Supersedes Date 07/30/2015

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1. PRODUCT AND COMPANY IDENTIFICATION

Product Name NA-104C
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
Corrosive to metals

Category 3

Health Hazard

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

Category 1
Category 3
Category 4
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

H226 - Flammable liquid and vapor
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H312 - Harmful in contact with skin
H332 - Harmful if inhaled
H336 - May cause drowsiness or dizziness
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H301 - Toxic if swallowed
H304 - May be fatal if swallowed and enters airways
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.
P241 - Use explosion-proof electrical, ventilating and lighting equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P260 - Do not breathe mist and vapor.
P271 - Use in a well-ventilated area.
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
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.
 P233 - Keep container tightly closed
 P406 - Store in a corrosion-resistant container.
 P403 + P235 - Store in a well-ventilated place. Keep cool.
 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
Morpholine	110-91-8	7-13
Cyclohexylamine	108-91-8	7-13

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. May cause sensitization of susceptible persons. Aspiration hazard if swallowed - can enter lungs and cause damage. May be fatal if swallowed and enters airways.

5. FIRE-FIGHTING MEASURES

Flash Point 138 °F / 59 °C	Method Pinsky Marten Closed Tester
Flammability Limits in Air %: Mixture.	Upper: 12 Lower: 1.5
Suitable Extinguishing Media	
Water spray. Carbon dioxide (CO ₂). 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
Storage Conditions

Minimum 35 °F / 2 °C
Indoor X **Outdoor**
Maximum 120 °F / 49 °C
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
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 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

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. May cause allergic skin reaction.
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. Blood disorder may occur after prolonged inhalation.
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. May be fatal if swallowed.
Chronic Toxicity	May cause sensitization by skin contact. May cause sensitization by inhalation. Liver and kidney injuries may occur. Inhaled corrosive substances can lead to a toxic edema of the lungs. Blood disorder may occur after prolonged inhalation. 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, Immune system, Blood, Heart.
Aggravated Medical Conditions	Kidney disorders, Skin disorders, Neurological disorders, Respiratory disorders, Blood disorders, Heart disease.

Component Information

Acute Toxicity

Component	Oral LD50	Dermal LD50	Inhalation LC50	Draize Test	Other
2-Diethylaminoethanol	= 1320 mg/kg (Rat)	= 1 mL/kg (Rabbit)	no data available	no data available	no data available
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
2-Diethylaminoethanol	no data available	skin sensitization	no data available	no data available	Skin, Eyes, Respiratory system
Morpholine	no data available	no data available	no data available	no data available	Skin, Eyes, Respiratory system, Liver, Kidney
Cyclohexylamine	no data available	skin sensitization, respiratory sensitization	no data available	Yes	Skin, Central nervous system, Eyes, Respiratory system

Carcinogenicity

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

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	log Pow
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
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
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 information 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, 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

16. OTHER INFORMATION

Prepared By Muneerah Travis
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Reason for Revision No information available.
Glossary No information available.
List of References. No information available.

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