N-ETHYLCYCLOHEXYLAMINE

ECC

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
Accelerator HX
Cyclohexylamine, n-ethyl
N-Cyclohexylethylamine
N-Ethylcyclohexanamine
Vulkacit HX

Liquid | Colorless | Musky ammonia odor

Floats and mixes slowly with water.

Keep people away. Avoid contact with liquid and vapor.
Avoid inhalation.
Wear goggles, self-contained breathing apparatus and rubber overclothing (including gloves).
Shut off ignition sources. Call fire department.
Notify local health and pollution agencies.
Protect water intakes.

Fire

COMBUSTIBLE.
Flashback along vapor trail may occur.
Containers may explode in fire.
Vapor may explode if ignited in enclosed area.
Wear goggles and self-contained breathing apparatus.
Extinguish with carbon dioxide, dry chemical, water spray, or alcohol foam.
Cool exposed containers with water.
Water may be ineffective on fire.

Exposure

CALL FOR MEDICAL AID.

VAPOR
Irritating to eyes, nose and throat.
Harmful if inhaled.
Move to fresh air.
If breathing has stopped, give artificial respiration.
If breathing is difficult, give oxygen.

LIQUID
Will burn skin and eyes.
Harmful if swallowed.
Remove contaminated clothing and shoes.
If in eyes, hold eyelids open and flush with plenty of water.
If swallowed, and victim is CONSCIOUS, have victim drink water or milk.
DO NOT INDUCE VOMITING.

Water Pollution

Effect of low concentration on aquatic life is unknown.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
Stop discharge
Contain
Collection Systems: Skim; Pump;
Dredge
Do not burn

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 7; Aliphatic amines
2.2 Formula: $C_2H_5NHC_6H_{11}$
2.3 IMO/UN Designation: 3.3/1993
2.4 DOT ID No.: 1993
2.5 CAS Registry No.: Currently not available
2.6 NAERG Guide No.: 128
2.7 Standard Industrial Trade Classification: 51453

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Gas mask suitable for ammonia; face shield or splash proof goggles; rubber gloves. If entering spill area, wear self-contained breathing apparatus and full protective clothing, including boots.
3.2 Symptoms Following Exposure: Inhalation of high concentration of vapor will produce irritation of the respiratory tract and lungs. Inhalation of large quantities of vapor may be fatal.
3.3 Treatment of Exposure: INHALATION: Remove from exposure area. Prompt medical attention required. EYES: Flush eyes with water for at least 10 minutes. Follow with a neutralizing or buffer solution if available. SKIN: Remove contaminated clothing. A dilute acetic acid (i.e vinegar) solution followed by a water rinse should be used to cleanse affected skin areas.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 2; LD_{50} = 590 mg/Kg (rat)
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: Vapors are moderately irritating such that personnel will not usually tolerate moderate or high concentrations.
3.11 Liquid or Solid Characteristics: Fairly severe skin irritant. May cause pain and second-degree burns after a few minutes contact.
3.12 Odor Threshold: Currently not available
3.13 IDLH Value: Not listed.
3.14 OSHA PEL-TWA: Not listed.
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: Not listed.
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

4.1 Flash Point: 86°F 0.C.; 115°F C.C.
4.2 Flammable Limits in Air: Currently not available
4.3 Fire Extinguishing Agents: Carbon dioxide, dry chemical, water spray or alcohol foam.
4.4 Fire Extinguishing Agents Not to Be Used: Water may be ineffective.
4.5 Special Hazards of Combustion Products: Currently not available
4.6 Behavior in Fire: Dangerous when exposed to heat or flame. Can react vigorously with oxidizing materials.
4.7 Auto Ignition Temperature: 545°F
4.8 Electrical Hazards: Currently not available
4.9 Burning Rate: Currently not available
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 63.1 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 17.5 (calc.)
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: Not reactive
5.2 Reactivity with Common Materials: Not reactive
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Currently not available
5.5 Polymerization: Will not occur
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity: Currently not available
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): Currently not available
6.4 Food Chain Concentration Potential: Currently not available
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 1
Human Oral hazard: 1
Human Contact hazard: II
Reduction of amenities: XX

7. SHIPPING INFORMATION

7.1 Grades of Purity: 97%; 99%
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: Not listed
7.4 Venting: Not listed
7.5 IMO Pollution Category: D
7.6 Ship Type: 3
7.7 Barge Hull Type: 3

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Not listed
8.2 49 CFR Class: Not pertinent
8.3 49 CFR Package Group: Not listed.
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	3
Flammability (Red).....	3
Instability (Yellow).....	0

8.6 EPA Reportable Quantity: Not listed.
8.7 EPA Pollution Category: Not listed.
8.8 RCRA Waste Number: Not listed
8.9 EPA FWPCA List: Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15° C and 1 atm: Liquid
9.2 Molecular Weight: 127.23
9.3 Boiling Point at 1 atm: 329°F = 165°C = 438.2°K
9.4 Freezing Point: –49°F = –45°C = 228.2°K
9.5 Critical Temperature: 677.1°F = 358.4°C = 631.6°K
9.6 Critical Pressure: 446.91 psia = 30.39 atm = 3.04 MN/m^2
9.7 Specific Gravity: 0.8527 at 25°C
9.8 Liquid Surface Tension: 29.52 dynes/cm = 0.02952 N/m at 20°C
9.9 Liquid Water Interfacial Tension: 43.5 dynes/cm = 0.0435 N/m at 20°C
9.10 Vapor (Gas) Specific Gravity: 4.4
9.11 Ratio of Specific Heats of Vapor (Gas): Currently not available
9.12 Latent Heat of Vaporization: Currently not available
9.13 Heat of Combustion: Currently not available
9.14 Heat of Decomposition: Currently not available
9.15 Heat of Solution: Currently not available
9.16 Heat of Polymerization: Not pertinent
9.17 Heat of Fusion: Currently not available
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: Currently not available

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE	77	1.384

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
68	2.300	175 200 225 250 275 300	0.585 1.134 2.032 3.426 5.494 8.456	175 200 225 250 275 300	0.01076 0.02404 0.03731 0.05058 0.06385 0.07713		CURRENTLY NOT AVAILABLE