

Methylamine

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product form : Substance
Name : Methylamine
CAS No : 76-16-4
CHEMICAL FAMILY : amines, aliphatic

Manufacturer / Distributor:

Ehsan International Gases

40/9, Aurangabad, Nazimabad
#3, Karachi 74600, Pakistan.

+92 21 36612091 – 36612907

info@ehsan.com.pk

www.ehsan.com.pk

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: METHYLAMINE, ANHYDROUS

CAS NUMBER: 74-89-5

PERCENTAGE: 100.0

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=4 FIRE=4 REACTIVITY=0

EMERGENCY OVERVIEW:

COLOR: colorless

PHYSICAL FORM: gas

ODOR: ammonia odor

MAJOR HEALTH HAZARDS: harmful if inhaled, respiratory tract burns, skin burns, eye burns, mucous membrane burns, allergic reactions

PHYSICAL HAZARDS: Flammable gas. May cause flash fire.

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POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation (possibly severe), nausea, difficulty breathing, headache, lung congestion, convulsions

LONG TERM EXPOSURE: allergic reactions, fainting **SKIN CONTACT:**

SHORT TERM EXPOSURE: irritation (possibly severe), allergic reactions, nausea, headache **LONG TERM**

EXPOSURE: same as effects reported in short term exposure **EYE CONTACT:**

SHORT TERM EXPOSURE: irritation (possibly severe), tearing, blindness **LONG TERM EXPOSURE:**

same as effects reported in short term exposure **INGESTION:**

SHORT TERM EXPOSURE: burns

LONG TERM EXPOSURE: same as effects reported in short term exposure

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). For burns, cover affected area securely with sterile, dry, loose-fitting dressing. Get medical attention.

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: DO NOT induce vomiting. Never make an unconscious person vomit or drink fluids. Give large amounts of water or milk. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

NOTE TO PHYSICIAN: For inhalation, consider oxygen. For skin contact, consider dilute acidic solution. For ingestion, consider esophagoscopy. Avoid gastric lavage.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive.

EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. For tank, rail car or tank truck: Let burn unless leak can be stopped immediately. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile). Stop flow of gas.

LOWER FLAMMABLE LIMIT: 4.9% **UPPER FLAMMABLE**

LIMIT: 20.7%

AUTOIGNITION: 806 F (430 C)

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6. ACCIDENTAL RELEASE MEASURES

AIR RELEASE:

Reduce vapors with water spray. Collect runoff for disposal as potential hazardous waste.

SOIL RELEASE:

Trap spilled material at bottom in deep water pockets, excavated holding areas or within sand bag barriers. Dike for later disposal. Absorb with sand or other non-combustible material. Add dilute acid.

WATER RELEASE:

Cover with absorbent sheets, spill-control pads or pillows. Neutralize. Collect with absorbent into suitable container. Add a reducing agent. Collect spilled material using mechanical equipment.

OCCUPATIONAL RELEASE:

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Protect from physical damage. Store outside or in a detached building. Store with flammable liquids. Keep separated from incompatible substances. Inside storage: Store in a cool, dry place. Store in a well-ventilated area. Avoid heat, flames, sparks and other sources of ignition.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

METHYLAMINE, ANHYDROUS:

METHYLAMINE:

10 ppm (12 mg/m³) OSHA TWA

5 ppm ACGIH TWA

15 ppm ACGIH STEL

10 ppm (12 mg/m³) NIOSH recommended TWA 10 hour(s)

VENTILATION: Provide local exhaust or process enclosure ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

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CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

100 ppm

Any air-purifying respirator with a full facepiece and a canister providing protection against this substance. Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted canister providing protection against the compound of concern.

Any powered, air-purifying respirator with cartridge(s) providing protection against this substance.

Any self-contained breathing apparatus with a full facepiece.

Any supplied-air respirator with a full facepiece.

Emergency or planned entry into unknown concentrations or IDLH conditions -

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Escape -

Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted canister providing protection against the compound of concern. Any appropriate escape-type, self-contained breathing apparatus.

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: gas

COLOR: colorless

ODOR: ammonia odor

MOLECULAR WEIGHT: 31.06

MOLECULAR FORMULA: C-H₃-N-H₂

BOILING POINT: 21 F (-6 C)

FREEZING POINT: -137 F (-94 C)

VAPOR PRESSURE: 2250 mmHg @ 20 C

VAPOR DENSITY (air=1): 1.08

SPECIFIC GRAVITY: Not applicable

DENSITY: 1.302 g/L @ 20 C

WATER SOLUBILITY: 108% @ 25 C

PH: basic

VOLATILITY: Not applicable

ODOR THRESHOLD: 0.02 ppm

EVAPORATION RATE: >1 (butyl acetate=1)

VISCOSITY: 0.00666 cP @ 25 C

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable **SOLVENT SOLUBILITY:**

Soluble: alcohol, ether, acetone, benzene

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

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CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Avoid inhalation of material or combustion by-products. Keep out of water supplies and sewers.

INCOMPATIBILITIES: acids, metals, halogens, combustible materials, oxidizing materials

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: oxides of carbon, nitrogen

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

METHYLAMINE, ANHYDROUS:

IRRITATION DATA: 100 mg open skin-guinea pig severe; 40 percent skin-rabbit severe; 40 percent eyesrabbit severe; 5 percent eyes-rabbit mild

TOXICITY DATA: 448 ppm/2.5 hour(s) inhalation-rat LC50; 100 mg/kg oral-rat LD50

LOCAL EFFECTS:

Corrosive: inhalation, skin, eye, ingestion

ACUTE TOXICITY LEVEL:

Toxic: inhalation, ingestion

TARGET ORGANS: immune system (sensitizer)

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: eye disorders, respiratory disorders, skin disorders and allergies

MUTAGENIC DATA: Available.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

FISH TOXICITY: 1000000 ug/L 48 hour(s) LC50 (Mortality) Medaka, high-eyes (*Oryzias latipes*)

INVERTEBRATE TOXICITY: 163000 ug/L 48 hour(s) EC50 (Immobilization) Water flea (*Daphnia magna*)

ALGAL TOXICITY: 3100 ug/L 96 hour(s) (Physiological) Green algae (*Gloeotaenium loitlesbergerianu*)

FATE AND TRANSPORT:

BIOCONCENTRATION: 6910 ug/L 24 hour(s) BCF (Residue) Diatom (*Cyclotella cryptica*) 110 ug/L

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262.

Hazardous Waste Number(s): D001.

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14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Methylamine, anhydrous

ID NUMBER: UN1061

15. REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

METHYLAMINE: 100 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):

ACUTE: Yes

CHRONIC: Yes

FIRE: Yes

REACTIVE: No

SUDDEN RELEASE: Yes

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29 CFR 1910.119):

METHYLAMINE: 1000 LBS TQ

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: ABD1E

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDL): Not determined.

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