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MSDS: Dimethylamine

PRODUCT INFORMATION

PRODUCT: Dimethylamine
TRADE NAME: Dimethylamine; Anhydrous
CHEMICAL NAME: Dimethylamine
SYNONYMS: Dimethylamine, Anhydrous
FORMULA: (CH₃)₂NH
CHEMICAL FAMILY: Alkyl Amine
SUPPLIER'S NAME: MEGS Inc.
SUPPLIER'S ADDRESS: 2675 De Miniac
Ville St-Laurent, Qc, H4S 1E5
EMERGENCY PHONE NUMBER: (514) 956-7503
MOLECULAR WEIGHT: 45.10
PRODUCT USE: Various
**PRODUCT IDENTIFICATION UN 1032
NUMBER:**

HAZARDOUS INGREDIENTS

CHEMICAL ID	CONCENTRATION	CAS #	LD(50)	LC(50)
Dimethylamine	99+%	124-40-3	Orl-Rat 698 mg/kg	1hl-Man 3700 mg/m ³

PHYSICAL DATA

PHYSICAL STATE: Gas and liquid under pressure
APPEARANCE: Colorless gas and liquid
ODOR: Fishy, ammoniacal odor
ODOR THRESHOLD: Unknown
SPECIFIC GRAVITY (H₂O = 1): 0.672
VAPOR PRESSURE: 138 kPa

VAPOR DENSITY (air = 1): 1.55
EVAPORATION RATE: Unknown
BOILING POINT: 7.4°C
FREEZING POINT: -92.2°C
pH: Alkaline
GAS DENSITY: 1.89 kg/m³ @ 15°C, 101.3 kPa
COEFFICIENT OF WATER/OIL DISTRIBUTION: Soluble in water forming an alkaline solution

FIRE OR EXPLOSION HAZARD

CONDITIONS OF FLAMMABILITY: Flammable in air over a specific wide range

Vapors are heavier than air and may travel to a source of ignition and flash back

MEANS OF EXTINCTION: Water, carbon dioxide, foam dry chemical. "Stop flow of gas before extinguishing fire".

FLASHPOINT AND METHOD OF DETERMINATION: -50°C cc

UPPER EXPLOSION LIMIT (% BY VOL): 14.4

LOWER EXPLOSION LIMIT (% BY VOL): 2.8

AUTO-IGNITION TEMPERATURE: 400°C

FLAMMABILITY CLASSIFICATION: Class 1, Group C

HAZARDOUS COMBUSTION PRODUCTS: NO_x

EXPLOSION DATA: Direct contact with mercury will produce explosive compounds

SENSITIVITY TO STATIC DISCHARGE: Yes

REACTIVITY DATA

CHEMICAL STABILITY: Stable

INCOMPATIBLE MATERIALS: Mercury, silver, copper and its alloys, tin, commercial nickel, zinc and its alloys, oxidizing compounds

CONDITIONS OF REACTIVITY: When mixed with strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO₂, hydrocarbons, NO_x, amine vapors

TOXICOLOGICAL PROPERTIES

ROUTES OF ENTRY:

SKIN CONTACT: Corrosive and irritating to the skin and eyes and mucous membranes

SKIN ABSORPTION: None

EYE: High concentrations could cause skin damage or eye burns.

INHALATION: Corrosive and irritating to the upper and lower respiratory tracts which could result in chemical pneumonitis and pulmonary edema. May also cause shortness of breath, headache, nausea and vomiting.

INGESTION: None

ACUTE OVER EXPOSURE EFFECTS: Dimethylamine is irritating and corrosive to all living tissues. Toxic level exposure to dermal tissue causes severe burns. High level concentrations are extremely destructive to the airway and eyes. Inhalation may have fatal consequences as a result of spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Eye burns result in ulceration of the conjunctivae and cornea and may cause destruction of all ocular tissues.

CHRONIC OVER EXPOSURE EFFECTS: None known

EXPOSURE LIMITS: TWA - 5 molar ppm, Stel - 15 molar ppm (ACGIH 1995-1996)

IRRITANCY OF PRODUCT: See Skin and Eyes, above.

SENSITIZATION TO MATERIAL: None known

CARCINOGENICITY, REPRODUCTIVE EFFECTS: None known

TERATOGENICITY, MUTAGENICITY: Cyt-rat-ihl = 50 mg/m³

TOXICOLOGICALLY SYNERGISTIC PRODUCTS: NOx, CO, Amines

PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: Butyl rubber, PVC or polyethylene gloves. Safety goggles or safety glasses and faceshield. Safety shoes, safety shower, eyewash "fountain" and PVC or butyl rubber apron.

SPECIFIC ENGINEERING CONTROLS: Carbon steel, stainless steel and Monel® are acceptable for use with dimethylamine. Most other metals are not compatible particularly silver, copper and its alloys, tin, nickel and zinc and its alloys. Lead is the preferred gasket material. Natural rubber, Buna S®, Buna N® and cellulose acetate are not acceptable plastics or elastomers to use.

LEAK AND SPILL PROCEDURES: EVACUATE ALL PERSONNEL FROM AFFECTED AREA.

Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is on container or container valve, contact the closest MEGS location.

WASTE DISPOSAL: Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to MEGS for proper disposal. For emergency disposal, contact the closest MEGS location.

HANDLING PROCEDURES AND EQUIPMENT: USE ONLY IN WELL-VENTILATED AREAS.

Valve protection caps must remain in place unless container is secured with valve outlet piped to the point of use. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Do not tamper with (valve) safety device. Close valve after each use and when empty.

STORAGE REQUIREMENTS: Protect cylinders from physical damage. Store in cool, dry, well-ventilated area of non combustible construction away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 52°C. Cylinders must be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in - first out" inventory system to prevent full cylinders being stored for excessive periods of time. Post "No Smoking or Open Flames" signs in the storage or use area. There should be no sources of ignition in the storage or use area.

TDG CLASSIFICATION: 2.1 (8)

WHMIS CLASSIFICATION: A, B3, D1, E

SPECIAL SHIPPING INFORMATION: Always secure cylinders in an upright position before transporting them. NEVER transport cylinders in trunks of vehicles, enclosed vans, truck cabs or in passenger compartments. Transport cylinders secured in open flatbed or in open pick-up type vehicles.

FIRST AID MEASURES

SPECIFIC FIRST AID PROCEDURES: PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO DIMETHYLAMINE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS AND BE COGNIZANT OF EXTREME FIRE AND EXPLOSION HAZARD.

INHALATION: Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area and given assisted respiration and supplemental oxygen. Further treatment should be symptomatic and supportive.

EYE CONTACT: PERSONS WITH POTENTIAL EXPOSURE TO DIMETHYLAMINE SHOULD NOT WEAR CONTACT LENSES.

Flush contaminated eye(s) with copious quantities of water. Part eyelids with fingers to assure complete flushing. Continue for minimum of 15 minutes.

SKIN CONTACT: Flush affected areas with copious quantities of water. Remove affected clothing as rapidly as possible. A physician should see the patient and be informed that the "burn" was caused by an alkaline solution. A weak (1-2%) acetic acid solution or vinegar may be used as a counteractant.

PREPARATION INFORMATION

PREPARED BY: Safety Department

DATE PREPARED: 09/01/1999

LAST REVISION DATE: 05/21/2002

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