

MATERIAL SAFETY DATA SHEET

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Version 1.7

Section 1 - Product and Company Information

Product Name METHYLAMINE, ANHYDROUS, 98+%
Product Number 295531
Brand ALDRICH

Company Sigma-Aldrich Canada, Ltd
Street Address 2149 Winston Park Drive
City, State, Zip, Country Oakville ON L6H 6J8 CA
Technical Phone: 9058299500
Emergency Phone: 800-424-9300
Fax: 9058299292

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313 No
METHYLAMINE	74-89-5	No

Formula CH5N
Synonyms Aminomethane * Carbinamine * Mercurialin *
Methanamine (9CI) * Methylamine (ACGIH:OSHA) *
Methylaminen (Dutch) * Metilamine (Italian) *
Metyloamina (Polish) * Monomethylamine
RTECS Number: PF6300000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable (USA) Extremely Flammable (EU). Highly Toxic (USA) Very Toxic (EU).

Toxic if swallowed. Very toxic by inhalation. Causes burns.
Danger: flammable, corrosive, and toxic liquid and gas under pressure. Lachrymator.

HMIS RATING

HEALTH: 3
FLAMMABILITY: 4
REACTIVITY: 0

NFPA RATING

HEALTH: 3
FLAMMABILITY: 4
REACTIVITY: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately. Do not induce vomiting.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

INFORMATION FOR PHYSICIAN

Symptoms may be delayed. Keep under medical observation.

Section 5 - Fire Fighting Measures

FLAMMABLE HAZARDS

Flammable Hazards: Yes

EXPLOSION HAZARDS

May form explosive mixtures with air Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

FLASH POINT

< -22 °F < -30 °C Method: closed cup

EXPLOSION LIMITS

Lower: 4.9 % Upper: 20.8 %

AUTOIGNITION TEMP

430 °C

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Extremely flammable. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area and keep personnel upwind. Shut off all sources of ignition. Shut off leak if there is no risk. Use nonsparking tools.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors.

Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe gas. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed. Store in a cool dry place. Cylinder temperature should not exceed 125°F (52°C).

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

WORK PRACTICES

Store and use with adequate ventilation.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Government approved respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

Other: Faceshield (8-inch minimum).

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	STEL	15 PPM
USA	ACGIH	TWA	5 PPM
USA	MSHA Standard-air	TWA	10 PPM (12 MG/M3)
USA	OSHA.	PEL	8H TWA 10 PPM (12 MG/M3)
New Zealand	OEL		
Remarks: check ACGIH TLV			
USA	NIOSH	TWA	10 PPM

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	5 MG/M3
Poland		NDSch	15 MG/M3
Poland		NDSP	-

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Compressed gas Color: Colorless Form: Clear liquid	
Property	Value	At Temperature or Pressure
Molecular Weight	31.06 AMU	
pH	14	20 °C Concentration: 100 g/l
BP/BP Range	-6.3 °C	760 mmHg
MP/MP Range	-93 °C	
Freezing Point	N/A	
Vapor Pressure	1395.9 mmHg	20 °C

Vapor Density	1.08 g/l	20 °C
Saturated Vapor Conc.	N/A	
SG/Density	0.7 g/cm3	
Bulk Density	N/A	
Odor Threshold	10 ppm	
Volatile%	N/A	
VOC Content	N/A	
Water Content	< 0.2 %	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	19.19 mN/m	25 °C
Partition Coefficient	Log Kow: -0.713	
Decomposition Temp.	N/A	
Flash Point	< -22 °F < -30 °C	Method: closed cup
Explosion Limits	Lower: 4.9 % Upper: 20.8 %	
Flammability	N/A	
Autoignition Temp	430 °C	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Other Solvents: SOLUBLE IN ETHANOL ACETONE, MISCIBLE IN ETHER	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Acids, Acid chlorides, Acid anhydrides, Oxidizing agents, Chloroformates, Phosphorus halides.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes burns.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes burns. Lachrymator.

Inhalation: May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion: Toxic if swallowed. Ingestion can cause immediate burning pain in the mouth, throat, abdomen; severe swelling of the larynx and skeletal paralysis affecting the ability to breathe, circulatory shock and convulsions.

SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema.

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and

vomiting.

TOXICITY DATA

Oral
Rat
100 mg/kg
LD50

Inhalation
Rat
448 ppm
LC50
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Lacrimation. Lungs, Thorax, or Respiration:Dyspnea. Skin and Appendages:Skin: After systemic exposure: Dermatitis, irritative.

Inhalation
Mouse
2,400 mg/m3
LC50

Inhalation
Mammal
2,400 mg/m3
LC50

IRRITATION DATA

Skin
Rabbit
40 %
Remarks: Severe irritation effect

Skin
Guinea pig
100 mg
Remarks: Open irritation test

CHRONIC EXPOSURE - MUTAGEN

Species: Rat
Route: Inhalation
Dose: 10 UG/M3
Mutation test: Dominant lethal test

Species: Mouse
Dose: 3 MMOL/L
Cell Type: lymphocyte
Mutation test: Mutation in mammalian somatic cells.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and

local environmental regulations.
APPROPRIATE METHOD OF DISPOSAL OF CONTAMINATED PACKAGING
Caution: no-return cylinder. Do not reuse. Empty cylinder will
contain hazardous residue. Follow proper disposal techniques.

Section 14 - Transport Information

DOT

Proper Shipping Name: Methylamine, anhydrous
UN#: 1061
Class: 2.1
Packing Group: None
Hazard Label: Flammable gas
PIH: Not PIH

IATA

Proper Shipping Name: Methylamine, anhydrous
IATA UN Number: 1061
Hazard Class: 2.1
Not Allowed - Aircraft: Cargo aircraft only. Not
permitted on passenger aircraft.

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: F+ Xn
Indication of Danger: Extremely Flammable. Harmful.
R: 12 20 37/38 41
Risk Statements: Extremely flammable. Harmful by inhalation.
Irritating to respiratory system and skin. Risk of serious
damage to eyes.
S: 16 26 29
Safety Statements: Keep away from sources of ignition - no
smoking. In case of contact with eyes, rinse immediately with
plenty of water and seek medical advice. Do not empty into
drains.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable (USA) Extremely Flammable (EU).
Highly Toxic (USA) Very Toxic (EU).
Risk Statements: Toxic if swallowed. Very toxic by inhalation.
Causes burns.
Safety Statements: Keep in a cool place. Keep away from sources
of ignition - no smoking. In case of contact with eyes, rinse
immediately with plenty of water and seek medical advice. After
contact with skin, wash immediately with plenty of soap-suds. Do
not empty into drains. Wear suitable protective clothing and
gloves. In case of accident or if you feel unwell, seek medical
advice immediately (show the label where possible).
US Statements: Danger: flammable, corrosive, and toxic liquid
and gas under pressure. Lachrymator.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No
TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in
accordance with the hazard criteria of the CPR, and the MSDS
contains all the information required by the CPR.
DSL: Yes
NDSL: No

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.