Material Safety Data Sheet
Methylamine Solution 40%

ACC# 14815

Section 1 - Chemical Product and Company Identification

MSDS Name: Methylamine Solution 40%
Catalog Numbers: M223-500
Synonyms: Aminomethane; Methanamine; Monomethylamine.
Company Identification:
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7732-18-5	Water	60	231-791-2
74-89-5	Methylamine	40	200-820-0

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: -18 deg C.
Danger! Corrosive. Causes eye and skin burns. Extremely flammable liquid and vapor. Vapor may cause flash fire. May cause respiratory and digestive tract burns. Harmful if inhaled or swallowed. May be harmful if absorbed through the skin. May cause lung damage. May cause liver damage.
Target Organs: Liver, respiratory system, eyes, skin.

Potential Health Effects
Eye: Causes eye burns. May result in corneal injury. May cause chemical conjunctivitis and corneal damage. May cause tearing, conjunctivitis and corneal edema when vapor is absorbed into the tissue of the eye.
Skin: Causes skin burns. May be absorbed through the skin. May cause dermatitis. Methylamine is readily absorbed through the skin and may cause malaise, discomfort, injury and death unless treated promptly.
Ingestion: Harmful if swallowed. Causes gastrointestinal tract burns.
Inhalation: Causes chemical burns to the respiratory tract. May cause pulmonary edema and severe respiratory disturbances. May cause liver abnormalities. Inhalation of methylamine may cause coughing, nausea and pulmonary edema. Allergic or chemical bronchitis was reported in a worker exposed to methylamine in an unpublished report. It is unclear from this report what the actual exposure concentrations were.
Chronic: Effects may be delayed. Repeated or prolonged exposure may result in liver disorders and/or adverse effects to respiratory system (like bronchopneumonia), eyes, or skin. Exposure in test animals has caused liver toxicity and abnormalities in blood chemistry and lungs.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid immediately.
Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.
Ingestion: If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Runoff to sewer may create fire or explosion hazard. Extremely flammable liquid and vapor. Vapor may cause flash fire. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.
Extinguishing Media: Use water spray, dry chemical, or "alcohol resistant" foam.
Flash Point: -18 deg C (-0.40 deg F)
Autoignition Temperature: 430 deg C (806.00 deg F)

Explosion Limits, Lower:4.90 vol %
Upper: 20.70 vol %
NFPA Rating: (estimated) Health: 3; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Avoid runoff into storm sewers and ditches which lead to waterways. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Approach spill from upwind. Use only non-sparking tools and equipment. Use water spray to cool and disperse vapors, protect personnel, and dilute spills to form nonflammable mixtures. 5% sulfuric acid may be used to neutralize diluted pools.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Discard contaminated shoes. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Do not breathe vapor. Use only with adequate ventilation. Keep away from heat, sparks and flame. Pipes, fittings, pumps, gauges, and other equipment should be made of steel or other material not subject to corrosion by methylamine. Methylamine may attack aluminum, copper, tin, zinc, lead and their alloys as well as rubber and some plastics.
Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Keep container closed when not in use. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Keep away from acids.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Ventilation fans and other electrical service must be non-sparking and have an explosion-proof design.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Water	none listed	none listed	none listed
Methylamine	5 ppm TWA; 15 ppm STEL	10 ppm TWA; 12 mg/m3 TWA 100 ppm IDLH	10 ppm TWA; 12 mg/m3 TWA

OSHA Vacated PELs: Water: No OSHA Vacated PELs are listed for this chemical. Methylamine: 10 ppm TWA; 12 mg/m3 TWA
Personal Protective Equipment
Eyes: Wear chemical splash goggles.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear, colorless
Odor: fishy ammonical
pH: >base than ammonia
Vapor Pressure: 485 mm Hg @20 deg C
Vapor Density: 1.07 (air=1)
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 48 deg C @ 760 mm Hg
Freezing/Melting Point:-38 deg C
Decomposition Temperature: Not available.
Solubility: Soluble.
Specific Gravity/Density:.9000g/cm3
Molecular Formula:CH5N
Molecular Weight:31.06

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid: Ignition sources, excess heat, attacks aluminum, copper, lead, tin, zinc and alloys.
Incompatibilities with Other Materials: Oxidizing agents, acids, aluminum, copper, copper alloys, halogenated agents, perchlorates, zinc, mercury, nitromethane, chlorine, hypochlorite, zinc alloys.
Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide, ammonia and/or derivatives, amines.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 7732-18-5: ZC0110000
CAS# 74-89-5: PF6300000
LD50/LC50:
CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg;

CAS# 74-89-5:
Inhalation, mouse: LC50 = 2400 mg/m3/2H;
Inhalation, rat: LC50 = 448 ppm/2.5H;
Oral, rat: LD50 = 100 mg/kg;

Carcinogenicity:
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 74-89-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found.
Teratogenicity: No information found.
Reproductive Effects: No information found.
Mutagenicity: Mutagenic effects have occurred in experimental animals.
Neurotoxicity: No information found.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.
Environmental: Exists in soil and water mainly in the protonated form. Expected to adsorb to clay and organic carbons in soil and suspended solids and sediment in water. Will biodegrade and not expected to bioconcentrate. Will exist solely in the gas phase in the atmosphere, and will be degraded by photochemically produced hydroxyl radicals (half-life = 18h).
Physical: No information available.
Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	METHYLAMINE, AQUEOUS SOLUTION	No information available.
Hazard Class:	3	
UN Number:	UN1235	
Packing Group:	II	

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 7732-18-5 is listed on the TSCA inventory.
CAS# 74-89-5 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
CAS# 74-89-5: 100 lb final RQ; 45.4 kg final RQ
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 74-89-5: acute, flammable.
Section 313 No chemicals are reportable under Section 313.
Clean Air Act:

This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 74-89-5 is listed as a Hazardous Substance under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

CAS# 74-89-5 is considered highly hazardous by OSHA.

STATE

CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 74-89-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

F C

Risk Phrases:

R 11 Highly flammable.
R 20/22 Harmful by inhalation and if swallowed.
R 34 Causes burns.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 29 Do not empty into drains.
S 3 Keep in a cool place.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 7732-18-5: No information available.
CAS# 74-89-5: 2

Canada - DSL/NDSL

CAS# 7732-18-5 is listed on Canada's DSL List.
CAS# 74-89-5 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, E.

Canadian Ingredient Disclosure List

CAS# 74-89-5 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 9/02/1997
Revision #5 Date: 3/04/2004