



MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1: Identification

1.1 Product identifiers

Product Name : Monomethylamine 45 %
CAS No. : 74-89-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended uses : Laboratory chemicals
Uses advised against: Food, drug, pesticide or biocidal product use.

1.3 Details of the supplier of the safety data sheet

Company : Krishna Solvechem Limited.
B/503, Sahayog, S. V. Road,
Kandivali (West), Mumbai – 400067. India.
Telephone : +91-22-6123 0222
Email : exports@kscl.co.in

1.4 Emergency telephone number

Emergency Phone : +91-8657457330

SECTION 2: Hazards identification

2.1 Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	(Category 2)
Skin Corrosion/Irritation	(Category 1B)
Acute oral and inhalation toxicity	(Category 4)
Specific target organ toxicity (single exposure)	(Category 3)
Target Organs - Respiratory system.	

2.2 Label elements

Pictogram :



Signal word

Danger

Hazard statement (s)

Highly flammable liquid and vapor



Precautionary statement (s)

Prevention

Harmful if swallowed or inhaled
Causes severe skin burns and eye damage
May cause respiratory irritation

Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Inhalation :

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Call a POISON CENTER or doctor/physician if you feel unwell

IF ON SKIN (or hair):

If skin irritation occurs: Get medical advice/attention
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse

Eyes:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

Storage:

Store in a well-ventilated place. Keep cool



Hazards not otherwise classified (HNOC)

Disposal:

Dispose of contents/container to an approved waste disposal plant
Lachrynator. The substance is harmful to aquatic animals

SECTION 3: Composition / information on ingredients

3.1

Component	CAS-No	Weight %
Monomethylamine	74-89-5	45 min
Water	7732-18-5	55 max

SECTION 4: First aid measures

4.1 Description of first aid measures

General Advice:

Remove to fresh air immediately. Get medical attention immediately. Take off contaminated clothing and shoes immediately. If symptoms persist, call a physician.

If inhalation :

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness bring patient into stable side position for transport.

In case of skin contact :

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

In case of eye contact :

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Ingestion :

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects :

Lachrymator. Causes skin and eye burns. Inhalation of vapours may cause throat pain and cough. Victim may experience shortness of breath and suffocation

4.3 Notes to Physician :

Treat symptomatically

SECTION 5: Firefighting effects

5.1 Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂), extinguishing powder or water spray/fog. Fight larger fires with water spray/fog or alcohol-resistant foam.

Unsuitable Extinguishing Media :

No information available

**5.2 Flash Point :
Method :**

<-10 °C

No information available



Autoignition Temperature:	430 °C
Explosion Limits:	
Upper	20.7 vol%
Lower	4.9 vol%
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available
Specific Hazards Arising from the Chemical :	Can form explosive vapour-air mixtures. Vapours are heavier than air and may spread along the floor.
Hazardous Combustion Products :	Carbon monoxide (CO). Carbon dioxide (CO ₂). Nitrogen oxides
5.4 Protective Equipment and Precautions for Firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
5.5 Additional information:	Cool endangered containers with water spray jet. Dispose of fire debris and contaminated fire fighting water in accordance with official regulations. If without risk possible, move drums with material away from dangerous area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Remove all ignition sources. Use breathing protection against the effects of fumes/dust/aerosol. Avoid contact with skin and eyes.

6.2 Environmental precautions

Damp down gases/fumes/haze with water spray jet. Do not allow to enter drainage system, surface or ground water. Inform respective authorities in case product reaches water or sewage system.

6.3 Methods and materials for containment and cleaning up

Use explosion proof equipments. Wear self contained breathing apparatus and protective suit. Ensure adequate ventilation. Absorb with liquid binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose of the material collected according to regulations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace. Ensure good interior ventilation, especially at floor level (fumes are heavier than air) restrict the quantity stored in the work place. Do not inhale vapors/aerosols. Avoid skin and eye contact under any circumstances

Information about protection against explosions and fires:

Fumes can combine with air to form an explosive mixture. Flammable fume/air mixtures may be formed in empty containers. Keep ignition sources away – do not smoke. Protect against electrostatic charges



7.2 Conditions for safe storage

Store under shade at ambient temperature and dry conditions in well-sealed containers. Protect from heat and direct sunlight. Store container in a well ventilated place. Protect from overexposure to light. Protect from humidity and keep away from water. Store in a locked cabinet or with access restricted to specifically instructed persons. Corrosive to copper, zinc alloys, aluminum and galvanized surfaces.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

OSHA PEL	10 ppm/12 mg/M3 TWA
NIOSH REL	10 ppm/12 mg/M3 TWA
ACGIH TLV	5 ppm/6.4 mg/M3

8.2 Exposure controls

Personal protective equipment -

Eye and Body protection

Tightly sealed safety glasses. Antistatic protective clothing. Use protective suit. Body protection must be chosen depending on activity and possible exposure.

Hand protection

Protective gloves. To avoid skin problems reduce the wearing of gloves to the required minimum. Check the permeability prior to each renewed use of the glove. The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material must be on consideration of the penetration times, rates of diffusion and the degradation. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. -**Recommended Material of gloves:** Nitrile rubber, styrene-butadiene rubber, Neoprene,

Respiratory protection

In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

Hygiene Measures

Keep away from foodstuffs, beverages and food. Do not eat, drink or smoke while working. Instantly remove any contaminated garments. Do not inhale gases/fumes/aerosols. Avoid contact with skin and eyes. Wash hands during

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance	Colorless Liquid
b) Odour	ammonia like
c) Odour Threshold	3.2 ppm
d) pH	11.2
e) Melting point / freezing point	No data available
f) Initial boiling point and	40 °C



boiling range	
g) Flash point	<-10 °C
h) Evaporation rate	No information available
i) Flammability (solid, gas)	Not applicable
j) Upper/lower flammability or explosive limits	Upper : 20.7 vol% Lower : 4.9 vol%
k) Vapour pressure	285 mm Hg @ 20 °C
l) Vapour density	1.08 (air=1.0) @ 20 °C
m) Specific Gravity	0.8800@ 20°C
n) Solubility	Soluble
o) Partition coefficient: n octanol/water	Log Pow= -0.57
p) Auto-ignition temperature	430 °C
q) Decomposition temperature	No data available
r) Viscosity	1.50 m Pa s @ 25 °C
s) Molecular formula	CH5N
t) Molecular Weight	31.0 g/mole
SECTION 10: Stability and Reactivity	
10.1 Reactive Hazard :	None known, based on information available
10.2 Chemical stability :	Stable under normal conditions.
10.3 Possibility of hazardous reactions :	Flammable vapour-air mixtures may develop. Used empty containers may contain product gases which form explosive mixtures with air. Exothermic reaction with acids. Possibility of formation of nitrosamines with nitrites or other nitrosating agents
10.4 Conditions to avoid :	Avoid static electricity discharge . Handle under nitrogen , protect from moisture.
10.5 Incompatible materials:	Strong oxidizing agents, Strong acids, halogenated Hydrocarbons, mercury, Zn and Cu
10.6 Hazardous decomposition products :	Carbon monoxide (CO), Carbon dioxide (CO2), Nitrogen oxides, Nitrosamine, ammonia



SECTION 11: Toxicological information

11.1

Information on toxicological effects

Acute toxicity:

LD50/LC50 value that are relevant for classification:

LD50 Oral (rat)	698 mg/kg
LD50 Dermal (Rat)	Corrosive material : hence not applicable 3550 ppm
LC50 inhalation , 4 hrs Rat	2.1-2.9 mg/L air

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation :	Corrosive
Sensitization:	No effect known
Carcinogenicity :	IARC- No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Mutagenic Effects:	No mutagenic effects observed in laboratory test animals.
Reproductive Effects:	No teratogenic effects observed in laboratory test animals
Developmental Effects :	No information available.
Teratogenicity:	No information available.
STOT - single exposure :	Respiratory system
STOT - repeated exposure:	None known
Aspiration hazard :	No information available.
Symptoms / effects, both acute and delayed:	No information available
Endocrine Disruptor Information :	No information available
Other Adverse Effects :	The toxicological properties have not been fully investigated.



SECTION 12: Ecological information

12.1

Toxicity: Aquatic toxicity:

Toxicity to Fish , LC50 – <i>Leuciscus idus</i>	16 mg/l for 48 hrs (non-neutralized solution) 970 mg/l for 48 hrs (neutralized solution)
Toxicity to Daphnia and other invertebrates (Daphnia Magna) EC50	163 mg/l for 48 hrs
Toxicity to algae (green algae)	21 % growth inhibition @ 31mg/l

12.2 Persistence and degradability:

substance is readily biodegradable

**Bioaccumulation/
Accumulation**

BCF – 3.16

12.3 Mobility:

No information available

Water hazard class 2 – Hazardous to water (Classification according to Administrative regulation)

SECTION 13: Disposal considerations

13.1 Waste treatment methods:

Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Waste disposal key number: According to local/national regulations.

European waste catalogue:

Waste disposal key numbers from EWC have to be assigned depending on origin and processing.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations. Drum decontamination shall be done by rinsing with 5% aqueous acetic acid solution followed by aqueous washes till neutral PH.

It is strongly recommended to disfigure the container/drum before disposal.

SECTION 14: Transport information

14.1 UN number :

ADR/RID: 1235
IMDG: 1235
IATA: 1235

14.2 UN proper shipping name

ADR/RID :

Methylamine Aqueous solution

IMDG :

Methylamine Aqueous solution

IATA :

Methylamine Aqueous solution

14.3 Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

14.4 Packaging group:

ADR/RID: II IMDG: II IATA: II

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Information about limitation of use: Employment restrictions concerning young persons must be observed.

Decree to be applied in case of technical fault:

Quantity limits according to "EC Seveso directive" should be observed.



Water hazard class: Water hazard class 2 (Self-assessment): hazardous for water

Other regulations, limitations and prohibitive regulations

Observe restrictions on the marketing and use according to Annex XVII of Regulation (EC) No 1907/2006.

15.2 Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

16.1 Prepared By:	Regulatory affairs Krishna Solvechem Limited
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Revision Summary:	This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 C FR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

16.2 Disclaimer:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.