Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification:

Product Description: Methane sulfonic acid
Synonyms: Methylsulfonic acid, MSA
CAS-No: 75-75-2
EC-No.: 200-898-6
Molecular Formula: CH$_4$O$_3$S

REACH Registration No: A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Recommended Use: Laboratory chemicals, for synthesis

1.3. Details of the supplier of the safety data sheet:

- Company
  Finar Limited
  184-186/P, Chacharwadi Vasna, Sarkhej-Bavla Highway,
  Ta.: Sanand, Dist.: Ahmedabad,
  Email: info@finarchemicals.com
  Web: www.finarchemicals.com
- E-Mail Address
  safety@finarchemicals.com; info@finarchemicals.com

1.4. Emergency Telephone Number:

- For Emergency contact on: +91 - 2717 - 616 717
- Registered office No: +91 - 79 – 40040085
SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture:

Classification according to Regulation (EC) No 1272/2008

Corrosive to metals, Category 1, H290
Acute toxicity, Category 4, Oral, H302
Acute toxicity, Category 4, Dermal, H312
Skin Corrosion, category 1B, H314
Specific target organ toxicity- single exposure, Category 3, Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2. Label Elements:

Labeling according Regulation (EC) No 1272/2008

Pictogram

Signal word Danger

Hazard statement(s)

H290 May be corrosive to metals.
H302 + H312 Harmful if swallowed or in contact with skin.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

Precautionary statement(s)

Prevention
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
Material Safety Data Sheet

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Methane Sulfonic Acid</th>
</tr>
</thead>
</table>

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/physician.

Reduced labelling (≤125 ml)

Pictogram

![Pictogram](image)

Signal word Danger

Hazard statement(s)
H314 Causes severe skin burns and eye damage.

Precautionary statement(s)
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/physician.

CAS No. 75-75-2

2.3. Other Hazards:
None Known

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances: Methane Sulfonic Acid

3.2. Mixtures:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>EC-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane Sulfonic Acid</td>
<td>75-75-2</td>
<td>200-898-6</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>
SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures:

- General advice
  First aider needs to protect himself.

- If inhaled
  Fresh air. Call in physician.

- If Contact with skin
  Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

- In case of eye contact
  Rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

- If swallowed
  Make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

4.2. Most important symptoms and effects, both acute and delayed:

Irritation and corrosion, Cough, Headache, Nausea, Vomiting, Dizziness, Lung oedema, Shortness of Breath.

Risk of blindness!

4.3. Indication of any immediate medical attention and special treatment needed:

No information available

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media:

Suitable Extinguishing Media- Use of dry chemical or carbon dioxide.

Unsuitable extinguishing media- Water, Foam

5.2. Special hazards arising from the substance or mixture:

Combustible.

May not get in touch with: Water
The product reacts with water and generates heat.
Vapours are heavier than air and may spread along floors.
Forms explosive mixtures with air on intense heating.
Development of hazardous combustion gases or vapours possible in the event of fire.
Fire may cause evolution of: Sulphur oxides

5.3. Advice for firefighters:
Special protective equipment for fire-fighters
Stay in danger area only with self-contained breathing apparatus.
Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further Information:
Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures:
Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact.
Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
Advice for emergency responders: Protective equipment see section 8.

6.2. Environmental precautions:
Do not let product enter drains.

6.3. Methods and material for containment and cleaning up:
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly.
Clean up affected area.

6.4. Reference to other sections:
For disposal see Sections 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling
Use only under a chemical fume hood. Wear personal protective equipment/face protection.
Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing.
Wash hands and face after working with substance.

7.2. **Conditions for safe storage, including any incompatibilities:**

Keep containers tightly closed in a dry, cool and well-ventilated place.

Protect from direct sunlight. Corrosives area.

7.3. **Specific end use(s):**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1. **Control parameters**

Contains no substances with occupational exposure limit values.

8.2. **Exposure Controls:**

- **Appropriate Engineering Controls:**

  Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

  See section 7.1.

**Personal Protective Equipment:**

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

**Eye & Face Protection** -

Tightly fitting safety goggles

**Hand Protection** -

Full contact:

- Glove Material: Polychloroprene
- Glove Thickness: 0.65 mm
- Break Through Time: 480 min

**Other Protective equipment** -

Acid-resistant protective clothing

**Respiratory Protection** -

Required when vapours/aerosols are generated.
Recommended Filter type: Filter B- (acc. To DIN 3181) for inorganic gases and vapours

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Environmental Exposure Controls**

Do not let product enter drains.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

9.1. Information on basic physical and chemical properties:

- **Appearance**: Colorless
- **Physical State**: Liquid
- **Odour**: Odourless
- **Odour Threshold**: No data available
- **pH**: < 1
- **Melting Point**: 19°C
- **Critical Temperature**: No data available
- **Vapor Pressure**: < 1 hPa at 20 °C
- **Relative Vapor Density**: No data available
- **Density**: 1.48 g/cm3 at 20 °C
- **Auto-Ignition Temperature**: 535 °C
- **Decomposition Temperature**: >180°C
- **Vollatility**: No data available
- **Bulk Density**: No data available
- **Viscosity**: 11.6 mPa.s @ 25°C
- **Water/Oil Dist. Co eff.**: No data available
- **Ionicity (in Water)**: No data available
- **Lower Explosion Limit**: 11.4 vol %
- **Upper Explosion Limit**: 24.3 vol %
- **Boiling Point/Range**: 167°C at 13 hPa
- **Flash Point**: 189°C
Material Safety Data Sheet

Product Name | Methane Sulfonic Acid
--- | ---

- Specific Gravity: 1.48 g/cm³
- Water Solubility: 1000 g/l at 20°C

9.2. Other information:

Molecular Formula: CH₄O₃S
Molecular Weight: 96.1 g/mol

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:
A range from approx. 15 Kelvin below the flash point is to be rated as critical.
Forms explosive mixtures with air on intense heating.

10.2. Chemical stability:
The product is chemically stable under standard ambient conditions (room temperature).

10.3. Possibility of hazardous reactions:
Violent reactions possible with: Strong alkalis, Oxidizing agents, strong reducing agents, Amines, Hydrogen fluoride, acids, strong alkalis, Bases
Risk of explosion/exothermic reaction with: Water, Hydrogen fluoride

10.4. Conditions to avoid:
Strong Heat

10.5. Incompatible materials:
Various metals, i.a., Iron, Copper, brass, Mild steel

10.6. Hazardous decomposition products:
In the event of fire: See section 5.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Oral toxicity
LD₅₀ Rat: 649 mg/kg
OECD Test Guideline 401
Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the
oesophagus and the stomach.

**Acute Inhalation toxicity**
Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages: damage of respiratory tract, Lung oedema, Symptoms may be delayed.

**Acute Dermal toxicity**
LD50 Rabbit: > 1,000 mg/kg
OECD Test Guideline 402

**Skin corrosion/irritation**
In vitro study
Result: Causes burns.
OECD Test Guideline 435
Causes burns.

**Serious eye damage/eye irritation**
Rabbit
Result: Causes burns
OECD Test Guideline 405
Causes serious damage.
Risk of blindness!

**Respiratory or skin sensitization**
Buehler Test Guinea pig
Result: negative
Method: OECD Test Guideline 406

**Germ cell mutagenicity**
Genotoxicity in vivo
In vivo micronucleus test
Mouse
male and female
oral
Bone marrow
Result: negative
Method: OECD Test Guideline 474

**Genotoxicity in vitro**
<table>
<thead>
<tr>
<th>Product Name</th>
<th>Methane Sulfonic Acid</th>
</tr>
</thead>
</table>

Ames test  
Salmonella typhimurium  
Result: negative  
Method: OECD Test Guideline 471  
In vitro mammalian cell gene mutation test  
Result: negative  
Method: OECD Test Guideline 476

**Carcinogenicity**  
No data available

**Reproductive toxicity**  
No data available

**Specific target organ toxicity - single exposure**  
May cause respiratory irritation. Target Organs: Respiratory system

**Specific target organ toxicity - repeated exposure**  
No data available

**Repeated dose toxicity**  
Rat  
* male and female  
Inhalation  
* Dust/mist  
28 d daily  
NOAEL: 0.242 mg/l  
OECD Test Guideline 412

**Subacute toxicity**

**Aspiration hazard**  
No data available

11.2 **Further Information**  
After absorption:  
Nausea, Vomiting, Dizziness, Headache  
Other dangerous properties cannot be excluded.  
Handle in accordance with good industrial hygiene and safety practice.
SECTION 12: ECOLOGICAL INFORMATION

12.1. **Toxicity:**

Toxicity to fish:
Static test LC50 Oncorhynchus mykiss (rainbow trout): 73 mg/l; 96 h
Analytical monitoring: yes
OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates:
Static test EC50 Daphnia magna (Water flea): 70 mg/l; 48 h
Analytical monitoring: yes
OECD Test Guideline 202

Toxicity to algae
Static test EC50 Pseudokirchneriella subcapitata (green algae): 12 - 24 mg/l; 72 h
Analytical monitoring: yes
OECD Test Guideline 201

Toxicity to bacteria
Static test EC50 activated sludge: > 1,000 mg/l; 0.5 h
OECD Test Guideline 209

12.2 **Persistence and degradability:**

Biodegradability
>90%; 28 d; aerobic
OECD Test Guideline 301A
Readily biodegradable

12.3 **Bioaccumulate potential:**

No data available

12.4 **Mobility in soil:**

No data available

12.5 **Results of PBT and vPvB assessment:**
Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

12.6 Other adverse effects:
Discharge into the environment must be avoided.

**SECTION 13: Disposal considerations**

13.1 Waste treatment methods:
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

**SECTION 14: Transport information**

<table>
<thead>
<tr>
<th></th>
<th>Land transport (ADR/RID)</th>
<th>Air transport (IATA)</th>
<th>Sea transport (IMDG)</th>
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<tbody>
<tr>
<td>14.1 UN number</td>
<td></td>
<td></td>
<td>UN 3265</td>
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<tr>
<td>14.2 Proper shipping name</td>
<td></td>
<td>CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (METHANESULFONIC ACID)</td>
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<tr>
<td>14.3 Class</td>
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<tr>
<td>14.4 Packing group</td>
<td></td>
<td></td>
<td>II</td>
</tr>
<tr>
<td>14.5 Environmentally hazardous</td>
<td></td>
<td></td>
<td>--</td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Tunnel Restriction code – E</td>
<td></td>
<td>EmS F-E S-D</td>
</tr>
<tr>
<td>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</td>
<td>Not Relevant</td>
<td>Segregation 0001 Acids</td>
<td></td>
</tr>
</tbody>
</table>

**SECTION 15: Regulatory information**

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
National Legislation
Storage class 6.1 A

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H290 May be Corrosive to metals.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

Training advice
Provide adequate information, instruction and training for operators.

Labelling

Pictogram

Signal word Danger

Hazard statement(s)
H290 May be corrosive to metals.
H302 + H312 Harmful if swallowed or in contact with skin.
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Methane Sulfonic Acid

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Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/physician.

References: Not available

Created: 17/08/2020

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