SAFETY DATA SHEET

Tricaine Mesylate

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Tricaine Mesylate
Product code : 3-Ethoxycarbonylanilinium methanesulphonate, Tricaine

Manufacturer or supplier's details
Company : MSD
Address : Rua Coronel Bento Soares, 530
            Cruzeiro - Sao Paulo - Brazil  CEP 12730-340
Telephone : 908-740-4000
Emergency telephone : 1-908-423-6000
E-mail address : EHSDATATESTeward@msd.com

Recommended use of the chemical and restrictions on use
Recommended use : Veterinary product

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification in accordance with ABNT NBR 14725 Standard
Not a hazardous substance or mixture.

GHS label elements in accordance with ABNT NBR 14725 Standard
Not a hazardous substance or mixture.

Other hazards which do not result in classification
Dust contact with the eyes can lead to mechanical irritation.
Contact with dust can cause mechanical irritation or drying of the skin.
May form explosive dust-air mixture during processing, handling or other means.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance
Substance name : 3-Ethoxycarbonylanilinium methanesulphonate
CAS-No. : 886-86-2

Components
<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
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</thead>
<tbody>
<tr>
<td>3-Ethoxycarbonylanilinium methanesulphonate</td>
<td>886-86-2</td>
<td></td>
<td>&gt;= 90 &lt;= 100</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled

: If inhaled, remove to fresh air.
  Get medical attention if symptoms occur.

In case of skin contact

: Wash with water and soap.
  Get medical attention if symptoms occur.

In case of eye contact

: If in eyes, rinse well with water.
  Get medical attention if irritation develops and persists.

If swallowed

: If swallowed, DO NOT induce vomiting.
  Get medical attention if symptoms occur.
  Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and delayed

: Contact with dust can cause mechanical irritation or drying of the skin.
  Dust contact with the eyes can lead to mechanical irritation.

Protection of first-aiders

: No special precautions are necessary for first aid responders.

Notes to physician

: Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

: Water spray
  Alcohol-resistant foam
  Carbon dioxide (CO2)
  Dry chemical

Unsuitable extinguishing media

: None known.

Specific hazards during firefighting

: Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
  Exposure to combustion products may be a hazard to health.

Hazardous combustion products

: Carbon oxides

Specific extinguishing methods

: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
  Use water spray to cool unopened containers.
  Remove undamaged containers from fire area if it is safe to do so.
  Evacuate area.

Special protective equipment for fire-fighters

: Wear self-contained breathing apparatus for firefighting if necessary.
  Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions

: Avoid release to the environment.
  Prevent further leakage or spillage if safe to do so.
  Retain and dispose of contaminated wash water.
  Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up:
- Sweep up or vacuum up spillage and collect in suitable container for disposal.
- Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
- Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.
- Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
- Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures:
- Static electricity may accumulate and ignite suspended dust causing an explosion.
- Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

Local/Total ventilation:
- Use only with adequate ventilation.

Advice on safe handling:
- Do not breathe dust.
- Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment.
- Minimize dust generation and accumulation.
- Keep container closed when not in use.
- Keep away from heat and sources of ignition.
- Take precautionary measures against static discharges.
- Take care to prevent spills, waste and minimize release to the environment.

Hygiene measures:
- If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.
- When using do not eat, drink or smoke.
- Wash contaminated clothing before re-use.
- The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

Conditions for safe storage:
- Keep in properly labeled containers.
- Store in accordance with the particular national regulations.

Materials to avoid:
- Do not store with the following product types:
  - Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
</table>

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SAFETY DATA SHEET

Tricaine Mesylate

Version 3.1  Revision Date: 10.10.2020  SDS Number: 4834852-00005  Date of last issue: 06.05.2020  Date of first issue: 10.09.2019

<table>
<thead>
<tr>
<th>3-Ethoxycarbonylanilinium methanesulphonate</th>
<th>886-86-2</th>
<th>TWA</th>
<th>70 µg/m3 (OEB 3)</th>
<th>Internal</th>
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</thead>
<tbody>
<tr>
<td>Further information: Skin, DSEN</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wipe limit</td>
<td>100 µg/100 cm²</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Engineering measures: All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices). Minimize open handling.

Personal protective equipment

Respiratory protection: If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type: Particulates type

Hand protection

Material: Chemical-resistant gloves

Remarks: Consider double gloving.

Eye protection: Wear safety glasses with side shields or goggles. If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles. Wear a face shield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

Skin and body protection: Work uniform or laboratory coat. Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces. Use appropriate degowning techniques to remove potentially contaminated clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Crystalline powder

Color: white

Odor: No data available

Odor Threshold: No data available

pH: 4.1 - 7.4

Melting point/freezing point: 149 - 150 °C

Initial boiling point and boiling range: No data available

Flash point: No data available
SAFETY DATA SHEET

Tricaine Mesylate

Evaporation rate : Not applicable
Flammability (solid, gas) : May form explosive dust-air mixture during processing, handling or other means.
Flammability (liquids) : Not applicable
Upper explosion limit / Upper flammability limit : No data available
Lower explosion limit / Lower flammability limit : No data available
Vapor pressure : Not applicable
Relative vapor density : Not applicable
Relative density : No data available
Density : No data available
Solubility(ies)
   Water solubility : 110 g/l
Partition coefficient: n-octanol/water : log Pow: 1,7
Autoignition temperature : No data available
Decomposition temperature : No data available
Viscosity
   Viscosity, kinematic : Not applicable
Explosive properties : Not explosive
Oxidizing properties : The substance or mixture is not classified as oxidizing.
Molecular weight : No data available
Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : May form explosive dust-air mixture during processing, handling or other means. Can react with strong oxidizing agents.

Conditions to avoid : Heat, flames and sparks.
   Avoid dust formation.
Incompatible materials : Oxidizing agents
SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:
- Inhalation
- Skin contact
- Ingestion
- Eye contact

Acute toxicity
Not classified based on available information.

Components:

3-Ethoxycarbonylanilinium methanesulphonate:
Acute oral toxicity:
- LD50 (Rat): 5.200 mg/kg
- LD50 (Mouse): 2.400 mg/kg
- LD50 (Dog): 4.000 mg/kg

Skin corrosion/irritation
Not classified based on available information.

Serious eye damage/eye irritation
Not classified based on available information.

Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Components:

3-Ethoxycarbonylanilinium methanesulphonate:
Genotoxicity in vitro:
- Test Type: Bacterial reverse mutation assay (AMES)
- Test system: Salmonella typhimurium
- Result: negative

Germ cell mutagenicity - Assessment
- Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.
Components:

3-Ethoxycarbonylanilinium methanesulphonate:
Reproductive toxicity - Assessment: Weight of evidence does not support classification for reproductive toxicity

STOT-single exposure
Not classified based on available information.

Components:

3-Ethoxycarbonylanilinium methanesulphonate:
Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Experience with human exposure

Components:

3-Ethoxycarbonylanilinium methanesulphonate:
General Information: Target Organs: Blood
Symptoms: Blood disorders
Target Organs: Central nervous system
Symptoms: seizures, Coma, Irregular cardiac activity, Respiratory disorders

Skin contact: Target Organs: Eye
Symptoms: Eye disease
Target Organs: Skin
Symptoms: Sensitization

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

3-Ethoxycarbonylanilinium methanesulphonate:
Toxicity to microorganisms: EC50 (Tetrahymena pyriformis): 52.5 mg/l
Exposure time: 48 h
Method: No data available

Persistence and degradability
No data available

Bioaccumulative potential

Components:

3-Ethoxycarbonylanilinium methanesulphonate:
Bioaccumulation : Bioconcentration factor (BCF): 4.76  
Method: OECD Test Guideline 305

Mobility in soil  
No data available

Other adverse effects  
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods  
Waste from residues : Dispose of in accordance with local regulations.  
Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.  
If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG  
Not regulated as a dangerous good

IATA-DGR  
Not regulated as a dangerous good

IMDG-Code  
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code  
Not applicable for product as supplied.

Domestic regulation

ANNT  
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

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

National List of Carcinogenic Agents for Humans - (LINACH)  
: Not applicable

Brazil. List of chemicals controlled by the Federal Police  
: Not applicable

International Regulations

The ingredients of this product are reported in the following inventories:

AICS  
: not determined
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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific
context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user’s end product, if applicable.

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