1 Identification

· Product identifier
  · Trade name: 1-methoxy-5-Methylphenazinium (methyl sulfate)
  · Article number: 21258
  · CAS Number: 65162-13-2
  · EC number: 265-579-6
· Application of the substance / the mixture
  This product is for research use - Not for human or veterinary diagnostic or therapeutic use.

· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier: Cayman Chemical Co.
    1180 E. Ellsworth Rd.
    Ann Arbor, MI 48108
    USA
  · Information department: Product safety department
  · Emergency telephone number:
    During normal opening times: +1 (734) 971-3335
    US/CANADA: 800-424-9300
    Outside US/CANADA: 703-741-5970

2 Hazard(s) identification

· Classification of the substance or mixture
  GHS08 Health hazard
  Carcinogenicity 2 H351 Suspected of causing cancer.

GHS07
  Acute Toxicity - Oral 4 H302 Harmful if swallowed.
  Skin Irritation 2 H315 Causes skin irritation.
  Eye Irritation 2A H319 Causes serious eye irritation.

· Label elements
  · GHS label elements
    The substance is classified and labeled according to the Globally Harmonized System (GHS).
Trade name: 1-methoxy-5-Methylphenazinium (methyl sulfate)

- **Hazard pictograms**
  - GHS07
  - GHS08

- **Signal word** Warning
- **Hazard statements**
  - H302 Harmful if swallowed.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H351 Suspected of causing cancer.
- **Precautionary statements**
  - P201 Obtain special instructions before use.
  - P202 Do not handle until all safety precautions have been read and understood.
  - P264 Wash thoroughly after handling.
  - P270 Do not eat, drink or smoke when using this product.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
  - P330 Rinse mouth.
  - P302+P352 If on skin: Wash with plenty of 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.
  - P308+P312 IF exposed or concerned: Get medical advice/attention.
  - P321 Specific treatment (see on this label).
  - P362+P364 Take off contaminated clothing and wash it before reuse.
  - P332+P313 If skin irritation occurs: Get medical advice/attention.
  - P337+P313 If eye irritation persists: Get medical advice/attention.
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**
  - Health = 2
  - Fire = 0
  - Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**
  - Health = 2
  - Fire = 0
  - Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
  - PBT: Not applicable.
  - vPvB: Not applicable.
Trade name: 1-methoxy-5-Methylphenazinium (methyl sulfate)

3 Composition/information on ingredients

- Chemical characterization: Substances
- CAS No. Description
  65162-13-2 1-methoxy-5-Methylphenazinium (methyl sulfate)
- Identification number(s)
  EC number: 265-579-6

4 First-aid measures

- Description of first aid measures
  - General information:
    Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - After inhalation: In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact: Immediately wash with water and soap and rinse thoroughly.
  - After eye contact:
    Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - After swallowing: Immediately call a doctor.
  - Information for doctor:
    - Most important symptoms and effects, both acute and delayed
      May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects.
    - No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed
    No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents:
    Use fire fighting measures that suit the environment.
    A solid water stream may be inefficient.
  - Special hazards arising from the substance or mixture
    No further relevant information available.
  - Advice for firefighters
    - Protective equipment: No special measures required.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Not required.
- Environmental precautions:
  Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:
  Dispose contaminated material as waste according to item 13.
- Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
- Protective Action Criteria for Chemicals
  - PAC-1: Substance is not listed.
  - PAC-2: Substance is not listed.
7 Handling and storage

- **Handling:**
  - **Precautions for safe handling**
    - No special precautions are necessary if used correctly.
    - Avoid breathing dust/fume/gas/mist/vapours/spray.
    - Avoid prolonged or repeated exposure.
    - Keep away from sources of ignition.
    - Take precautionary measures against static discharge.
  - **Information about protection against explosions and fires:** No special measures required.
  - **Conditions for safe storage, including any incompatibilities**
  - **Storage:** Store in accordance with information listed on the product insert.
  - **Requirements to be met by storerooms and receptacles:** No special requirements.
  - **Information about storage in one common storage facility:** Not required.
  - **Further information about storage conditions:** Keep receptacle tightly sealed.
  - **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
  - **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
  - **Personal protective equipment:**
  - **General protective and hygienic measures:**
    - Keep away from foodstuffs, beverages and feed.
    - Immediately remove all soiled and contaminated clothing.
    - Wash hands before breaks and at the end of work.
    - Avoid contact with the eyes and skin.
  - **Breathing equipment:** Not required.
  - **Protection of hands:**

  **Protective gloves**

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

  **Material of gloves**
  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.

  **Penetration time of glove material**
  The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
## 9 Physical and chemical properties

### General Information

- **Appearance:**
  - **Form:** Solid
  - **Color:** Not determined.
  - **Odor:** Characteristic
- **Structural Formula**: C14H13N2O • CH3SO4
- **Molecular Weight**: 336.4 g/mol
- **Odor threshold**: Not determined.
- **pH-value**: Not applicable.

### Change in condition

- **Melting point/Melting range**: Undetermined.
- **Boiling point/Boiling range**: Undetermined.

### Flammability

- **Flammability (solid, gaseous)**: Product is not flammable.
- **Decomposition temperature**: Not determined.
- **Auto igniting**: Not determined.
- **Danger of explosion**: Product does not present an explosion hazard.

### Explosion limits

- **Lower**: Not determined.
- **Upper**: Not determined.

### Vapor pressure

- **Not applicable.**

### Density

- **Not determined.**

### Solubility

- **Water**: 1 mg/ml

### Partition coefficient (n-octanol/water)

- **Not determined.**

### Viscosity

- **Dynamic**: Not applicable.
- **Kinematic**: Not applicable.

### Other information

- **No further relevant information available.**
10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability
- Thermal decomposition / conditions to be avoided:
  No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: Oxidizing agents
- Hazardous decomposition products:
  Carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
- Primary irritant effect:
  - on the skin: Irritant to skin and mucous membranes.
  - on the eye: Irritating effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:
- Carcinogenic categories
  - IARC (International Agency for Research on Cancer) Substance is not listed.
  - NTP (National Toxicology Program) Substance is not listed.
  - OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.

12 Ecological information

- Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
- Behavior in environmental systems:
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
- Additional ecological information:
- General notes:
  Water hazard class 1 (Self-assessment): Slightly hazardous for water
  Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
- Other adverse effects: No further relevant information available.
13 Disposal considerations

- Waste treatment methods
  - Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
  - DOT, IMDG, IATA: not regulated

- UN proper shipping name
  - DOT, IMDG, IATA: not regulated

- Transport hazard class(es)
  - DOT, ADN, IMDG, IATA: not regulated

- Packing group
  - DOT, IMDG, IATA: not regulated

- Environmental hazards:
  - Not applicable.

- Special precautions for user
  - Not applicable.

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
  - Not applicable.

- UN "Model Regulation": not regulated

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - No further relevant information available.

- Sara

- Section 355 (extremely hazardous substances): Substance is not listed.

- Section 313 (Specific toxic chemical listings): Substance is not listed.

- TSCA (Toxic Substances Control Act): Substance is not listed.

- Hazardous Air Pollutants: Substance is not listed.

- Proposition 65

- Chemicals known to cause cancer: Substance is not listed.

- Chemicals known to cause reproductive toxicity for females: Substance is not listed.

- Chemicals known to cause reproductive toxicity for males: Substance is not listed.

- Chemicals known to cause developmental toxicity: Substance is not listed.

- Carcinogenic categories

- EPA (Environmental Protection Agency): Substance is not listed.

- TLV (Threshold Limit Value): Substance is not listed.

- NIOSH-Ca (National Institute for Occupational Safety and Health): Substance is not listed.

(Contd. on page 8)
Trade name: 1-methoxy-5-Methylphenazinium (methyl sulfate)

16 Other information

- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

- Department issuing SDS: Environment protection department.
- Contact: -
- Date of preparation / last revision: 11/01/2022
- Abbreviations and acronyms:
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Acute Toxicity - Oral 4: Acute toxicity – Category 4
  - Skin Irritation 2: Skin corrosion/irritation – Category 2
  - Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
  - Carcinogenicity 2: Carcinogenicity – Category 2

- * Data compared to the previous version altered.