1. Identification

Product identifier Mesoridazine Besylate

Other means of identification
Catalog number 1393005
Chemical name 10H-Phenothiazine, 10-[2-(1-methyl-2-piperidinyl)ethyl]-2-(methylsulfinyl)-, monobenzenesulfonate
Synonym(s) Mesoridazine benzenesulfonate

Recommended use Specified quality tests and assay use only.
Recommended restrictions Not for use as a drug. Not for administration to humans or animals.

Manufacturer/Importer/Supplier/Distributor information
Company name U. S. Pharmacopeia
Address 12601 Twinbrook Parkway
Rockville
MD
20852-1790
US
Telephone RS Technical Services 301-816-8129
Website www.usp.org
E-mail RSTECH@usp.org
Emergency phone number CHEMTREC within US & Canada 1-800-424-9300
CHEMTREC outside US & Canada +1 703-527-3887

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Acute toxicity, oral Category 4
Sensitization, skin Category 1B
Specific target organ toxicity, single exposure Category 1 (heart)
Specific target organ toxicity, repeated exposure Category 1 (nervous system)

OSHA hazard(s) Not classified.

Label elements

Signal word Danger
Hazard statement Harmful if swallowed. May cause an allergic skin reaction. Causes damage to organs (heart). Causes damage to organs (nervous system) through prolonged or repeated exposure.
Precautionary statement
Prevention Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves.
Response If swallowed: Call a poison center/doctor/medical professional if you feel unwell. Rinse mouth. If on skin: Wash with plenty of water/soap. If skin irritation or rash occurs: Get medical advice/attention. If exposed: Call a poison center/doctor/medical professional. Wash contaminated clothing before reuse.
Storage Store locked up.
Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) Not classified.
3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance</th>
<th>Hazardous components</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesoridazine Besylate</td>
<td>Mesoridazine benzenesulfonate</td>
<td>32672-69-8</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

4. First-aid measures

**Inhalation**
Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact**
Wash off with soap and plenty of water. Get medical attention if irritation develops and persists.

**Eye contact**
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

**Ingestion**
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth thoroughly.

**Most important symptoms/effects, acute and delayed**
May cause allergic skin reaction. Decrease in motor functions. Behavioral changes.

**Indication of immediate medical attention and special treatment needed**
Treatment of phenothiazine overdose should be symptomatic and supportive.

1. Do NOT induce vomiting. Perform gastric lavage. Administer activated charcoal as a slurry.
2. Control cardiac arrhythmias with intravenous phentoin. Treat ventricular tachydysrhythmias with sodium bicarbonate.
3. For Torsades de Pointes, treat hemodynamically unstable patients with electrical cardioversion. Treat stable patients with magnesium and/or atrial overdrive pacing. Correct electrolyte abnormalities.
4. Treat hypotension with positioning, intravenous fluids, and norepinephrine or phenylephrine.
5. Do NOT use epinephrine.
6. Treat convulsions with a benzodiazepine and phentoin. Monitor ECG. Do NOT use barbiturates that may potentiate respiratory and CNS depression.
7. For parkinsonian effects or dystonia, administer benztropine or diphenhydramine.
8. Treat neuroleptic malignant syndrome with cooling and bromocriptine.
9. Treat acid-base status, fluid and electrolyte balance, hepatic enzymes, renal function, urine output, and cardiac function.
10. Most phenothiazines are not removed by dialysis. [Meditext; USP DI]

**General information**
Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention.

5. Fire-fighting measures

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide, or foam as appropriate for surrounding fire and materials.

**Unsuitable extinguishing media**
None known.

**Specific hazards arising from the chemical**
No unusual fire or explosion hazards noted.

**Special protective equipment and precautions for firefighters**
Wear suitable protective equipment.

**Fire-fighting equipment/instructions**
As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

**Specific methods**
Cool containers exposed to flames with water until well after the fire is out.

6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Avoid inhalation of dust from the spilled material. Wear appropriate personal protective equipment.

**Methods and materials for containment and cleaning up**
Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid the generation of dusts during clean-up. For waste disposal, see section 13 of the SDS. Wash spill site.

7. Handling and storage

**Precautions for safe handling**
As a general rule, when handling USP Reference Standards, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly.
Conditions for safe storage, including any incompatibilities

Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.

8. Exposure controls/personal protection

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

No exposure standards allocated.

Appropriate engineering controls

Airborne exposure should be controlled primarily by engineering controls such as general dilution ventilation, local exhaust ventilation, or process enclosure. Local exhaust ventilation is generally preferred to general exhaust because it can control the contaminant at its source, preventing dispersion into the work area. An industrial hygiene survey involving air monitoring may be used to determine the effectiveness of engineering controls. Effectiveness of engineering controls intended for use with highly potent materials should be assessed by use of nontoxic surrogate materials.

Local exhaust ventilation such as a laboratory fume hood or other vented enclosure is recommended, particularly for grinding, crushing, weighing, or other dust-generating procedures.

Individual protection measures, such as personal protective equipment

Eye/face protection

Safety glasses with sideshields are recommended. Face shields or goggles may be required if splash potential exists or if corrosive materials are present. Approved eye protection (e.g., bearing the ANSI Z87 or CSA stamp) is preferred. Maintain eyewash facilities in the work area.

Skin protection

Hand protection

Chemically compatible gloves. For handling solutions, ensure that the glove material is protective against the solvent being used. Use handling practices that minimize direct hand contact. Employees who are sensitive to natural rubber (latex) should use nitrile or other synthetic nonlatex gloves. Use of powdered latex gloves should be avoided due to the risk of latex allergy.

Other

For handling of laboratory scale quantities, a cloth lab coat is recommended. Where significant quantities are handled, work clothing may be necessary to prevent take-home contamination.

Respiratory protection

Where respirators are deemed necessary to reduce or control occupational exposures, use NIOSH-approved respiratory protection and have an effective respirator program in place (applicable U.S. regulation OSHA 29 CFR 1910.134).

Thermal hazards

Not available.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance

White to pale yellow powder.

Physical state

Solid.

Form

Powder.

Odor

Faint odor.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

352.4 °F (178 °C) (decomposes)

Initial boiling point and boiling range

Not available.

Flash point

680.00 °F (360.00 °C) (hot plate)

Evaporation rate

Not available.

Flammability (solid, gas)

Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

Not available.

Flammability limit - upper (%)

Not available.

Explosive limit - lower (%)

Not available.

Explosive limit - upper (%)

Not available.

Vapor pressure

Not available.

Vapor density

Not available.

Relative density

Not available.

Solubility in water

Freely soluble.

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature

> 680 °F (> 360 °C)
Decomposition temperature: Not available.
Viscosity: Not available.

Other information
- **Chemical family**: Piperidine phenothiazine.
- **Molecular formula**: C₂₁H₂₆N₂O₂S₂ . C₆H₆O₃S
- **Molecular weight**: 544.75
- **pH in aqueous solution**: 4.2 - 5.7 (1 in 100 solution)
- **Solubility (other)**: Freely soluble in methanol and in chloroform.

10. Stability and reactivity

**Reactivity**: No reactivity hazards known.
**Chemical stability**: Material is stable under normal conditions.
**Possibility of hazardous reactions**: No dangerous reaction known under conditions of normal use.
**Conditions to avoid**: None known.
**Incompatible materials**: Strong oxidizing agents.
**Hazardous decomposition products**: NOₓ, SOₓ. Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions.

11. Toxicological information

**Information on likely routes of exposure**

- **Ingestion**: Harmful if swallowed.
- **Inhalation**: Due to lack of data the classification is not possible.
- **Skin contact**: May cause an allergic skin reaction.
- **Eye contact**: Due to lack of data the classification is not possible.

**Symptoms related to the physical, chemical, and toxicological characteristics**


**Delayed and immediate effects of exposure**

Blood disorders. Prolonged QTc interval.

**Chronic effects**

For phenothiazines: Skin and eye discoloration. Tardive dyskinesia.

**Cross sensitivity**

Persons sensitive to any other phenothiazine may be sensitive to this material also.

**Medical conditions aggravated by exposure**


**Acute toxicity**

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesoridazine Besylate (CAS 32672-69-8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>Mouse</td>
<td>560 mg/kg</td>
</tr>
<tr>
<td>LD₅₀</td>
<td></td>
<td>346 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Rat</td>
<td>644 mg/kg</td>
</tr>
<tr>
<td><strong>Skin corrosion/irritation</strong></td>
<td>Due to lack of data the classification is not possible.</td>
<td></td>
</tr>
<tr>
<td><strong>Serious eye damage/eye irritation</strong></td>
<td>Due to lack of data the classification is not possible.</td>
<td></td>
</tr>
<tr>
<td><strong>Respiratory sensitization</strong></td>
<td>Due to lack of data the classification is not possible.</td>
<td></td>
</tr>
<tr>
<td><strong>Skin sensitization</strong></td>
<td>May cause an allergic skin reaction.</td>
<td></td>
</tr>
<tr>
<td><strong>Germ cell mutagenicity</strong></td>
<td>Due to lack of data the classification is not possible.</td>
<td></td>
</tr>
</tbody>
</table>
Carcinogenicity
Due to lack of data the classification is not possible.
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Phenothiazines produce an elevation in prolactin concentrations. In vitro studies show about 1/3
of human breast cancers are prolactin-dependent. Studies in rodents found an increase in
mammary tumors after long-term administration of antipsychotic medications. Early
epidemiological studies did not show an association between chronic administration of
antipsychotics and breast cancer in women. A later study found a modest dose-related increased
risk of breast cancer in women using antipsychotic dopamine antagonists. The available evidence
is inconclusive.

Reproductive toxicity
Based on available data, the classification criteria are not met.
There have been reports of prolonged jaundice, under or overactive reflexes, movement
disorders, and withdrawal effects (runny nose, vomiting, difficulty breathing) in newborns exposed
to phenothiazines in utero.

Reproductivity
100 mg/kg Reproductivity and development study
Result: No increase in the incidence of birth defects.
70 mg/kg doses of mesoridazine increased intrauterine
resorptions.
Species: Rat
100 mg/kg Reproductivity and development study
Result: No increase in the incidence of birth defects.
125 mg/kg doses of mesoridazine increased intrauterine
resorptions.
Species: Rabbit

Specific target organ toxicity -
single exposure
Causes damage to organs (heart).

Specific target organ toxicity -
repeated exposure
Causes damage to organs (nervous system) through prolonged or repeated exposure.

Aspiration hazard
Based on available data, the classification criteria are not met.

12. Ecological information
Ecotoxicity
There are no data on the ecotoxicity of this product.

Persistence and degradability
No data is available on the degradability of this product.

Bioaccumulative potential
Not available.

Mobility in soil
Not available.

Other adverse effects
Not available.

13. Disposal considerations
Disposal instructions
This product, in its present state, when discarded or disposed of, is not a hazardous waste
according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of
the user of the product to determine, at the time of disposal, whether the product meets RCRA
criteria for hazardous waste. Dispose in accordance with all applicable regulations.

Local disposal regulations
Not available.

Hazardous waste code
Not regulated.

Waste from residues / unused
products
Empty containers or liners may retain some product residues. This material and its container must
be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Since emptied containers may retain product residue, follow label warnings even after container is
emptied.

14. Transport information
DOT
Not regulated as a hazardous material by DOT.

IATA
Not regulated as a dangerous good.

Transport in bulk according to
Annex II of MARPOL 73/78 and
the IBC Code
No information available.

15. Regulatory information
US federal regulations
One or more components are not listed on TSCA.
CERCLA/SARA Hazardous Substances - Not applicable.
Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories**
- Immediate Hazard - Yes
- Delayed Hazard - Yes
- Fire Hazard - No
- Pressure Hazard - No
- Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**
No

**SARA 311/312 Hazardous chemical**
No

**Other federal regulations**
- **Safe Drinking Water Act (SDWA)**
  Not regulated.
- **Food and Drug Administration (FDA)**
  Not regulated.

**US state regulations**
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>No</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**16. Other information, including date of preparation or last revision**

- **Issue date**
  07-02-2003
- **Revision date**
  05-10-2013
- **Version #**
  02
- **Further information**
  Not available.

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**Revision Information**
This document has undergone significant changes and should be reviewed in its entirety.