4-DIPHENYLAMINE-4-SULFONIC ACID BARIUM SALT

1. Product Identification

Synonyms: Benzenesulfonic acid, 4-(phenylamino)-barium salt; Barium diphenylaminesulfonate; redoxindicator; N-Phenylsulfonic Acid, barium salt
CAS No.: 6211-24-1
Molecular Weight: 633.90
Chemical Formula: (C12H11NO3S)2.Ba
Product Codes: B652

2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No</th>
<th>Percent</th>
<th>Hazardous</th>
</tr>
</thead>
</table>

3. Hazards Identification

Emergency Overview

CAUTION! MAY BE HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT. MAY AFFECT BLOOD SYSTEM.

Potential Health Effects

The health effects of this substance have not been thoroughly investigated. The health hazards are expected to parallel those for diphenylamine, CAS number 122-39-4 (a comparable compound).

Inhalation:
Inhalation of dusts of a comparable compound may cause irritation to the respiratory tract and cause moderate systemic effects such as methemoglobinemia by absorption.

Ingestion:
Comparable compounds are moderately toxic by ingestion and can cause blood circulation problems.

Skin Contact:
Comparable compounds cause irritation and may be absorbed through the skin.

Eye Contact:
May cause irritation.

Chronic Exposure:
No information found.

Aggravation of Pre-existing Conditions:
No information found.

4. First Aid Measures

Procedures that parallel those of diphenylamine (CAS #122-39-4) will be discussed.

Inhalation:
Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:
Remove any contaminated clothing. Wash skin with soap or mild detergent and water for at least 15 minutes. Get medical attention if irritation develops or persists.

**Eye Contact:**
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

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### 5. Fire Fighting Measures

**Fire:**
Not considered to be a fire hazard.

**Explosion:**
Not considered to be an explosion hazard.

**Fire Extinguishing Media:**
Use any means suitable for extinguishing surrounding fire.

**Special Information:**
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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### 6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

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### 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances.

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### 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:**
None established.
For Diphenylamine (CAS #122-39-4), a comparable compound: ACGIH Threshold Limit Value (TLV): 10 mg/m³ (TWA).

**Ventilation System:**
A system of local and/or general exhaust is recommended to keep employee exposures as
low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):**
If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece dust/mist respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. An OV/DM respirator may be preferable when odor is a problem.

**Skin Protection:**
Wear protective gloves and clean body-covering clothing.

**Eye Protection:**
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

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**9. Physical and Chemical Properties**

Little physical or chemical information was found for this substance. General information is shown as applicable.

**Appearance:**
Gray crystals.

**Odor:**
No information found.

**Solubility:**
Slightly soluble in water.

**Specific Gravity:**
No information found.

**pH:**
No information found.

**% Volatiles by volume @ 21C (70F):**
No information found.

**Boiling Point:**
No information found.

**Melting Point:**
No information found.

**Vapor Density (Air=1):**
No information found.

**Vapor Pressure (mm Hg):**
No information found.
10. Stability and Reactivity

**Stability:**
Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**
Burning may produce carbon monoxide, carbon dioxide, sulfur oxides, and nitrogen oxides.

**Hazardous Polymerization:**
Will not occur.

**Incompatibilities:**
Diphenylamine (CAS #122-39-4), a comparable compound, reacts violently with hexachloromelamine, trichloromelamine and strong oxidizers.

**Conditions to Avoid:**
No information found.

11. Toxicological Information

No LD50/LC50 information found relating to normal routes of occupational exposure. A comparable compound, diphenylamine (CAS #122-39-4), has an Oral rat LD50: 2000 mg/kg.

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<tr>
<th>Ingredient</th>
<th>NTP Carcinogen</th>
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<tr>
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<td>Known Anticipated IARC Category</td>
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<tr>
<td>4-Diphenylamine-4-sulfonic Acid Barium Salt (6211-24-1)</td>
<td>No No None</td>
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</table>

12. Ecological Information

**Environmental Fate:**
No information found.

**Environmental Toxicity:**
No information found.
13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

**Domestic (Land, D.O.T.)**

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**Proper Shipping Name:** BARIUM COMPOUNDS, N.O.S. (BARIUM DIPHENYLAMINESULFONATE)

**Hazard Class:** 6.1

**UN/NA:** UN1564

**Packing Group:** II

**Information reported for product/size:** 25G

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**International (Water, I.M.O.)**

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15. Regulatory Information

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<th>Japan</th>
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Chemical Inventory Status - Part 2

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Federal, State & International Regulations - Part 1

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<tr>
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<th>TPQ</th>
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Federal, State & International Regulations - Part 2

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<tr>
<th>Ingredient</th>
<th>CERCLA</th>
<th>-RCRA- 261.33</th>
<th>-TSCA- 8(d)</th>
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Chemical Weapons Convention: No  TSCA 12(b): No  CDTA: No
SARA 311/312: Acute: Yes  Chronic: No  Fire: No  Pressure: No  Reactivity: No  (Pure / Solid)

Australian Hazchem Code: 2Z
Poison Schedule: No information found.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 3  Flammability: 1  Reactivity: 0
Label Hazard Warning:
CAUTION! MAY BE HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT. MAY AFFECT BLOOD SYSTEM.
Label Precautions:
Avoid breathing dust.
Avoid contact with eyes, skin and clothing.
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.

**Label First Aid:**
If swallowed, call a physician immediately. In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. Call a physician if irritation develops or persists. If inhaled, remove to fresh air. Get medical attention for any breathing difficulty.

**Product Use:**
Laboratory Reagent.

**Revision Information:**
No changes.

**Disclaimer:**
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