Material Safety Data Sheet

**Section 1. Chemical Product and Company Identification**

**Common Name/Trade Name**
Benzotriazole

**Manufacturer**
SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

**Commercial Name(s)**
Not available.

**Synonym**
1,2,3-Triaza-1H-Indene; 1,2,3-Triazaindene; 1,2-Aminozophenylene; 1,2,3-Benzotriazole; 2,3-Diazandole; Azimidobenzene; Aziminobenzene; Benzene azimide; Cobratec #99

**Chemical Name**
1H-Benzotriazole

**Chemical Family**
Not available.

**Chemical Formula**
C6-H5-N3

**Supplier**
SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

**Catalog Number(s).**
 YY915, B1037, B1042, B1089, YY554

**CAS#**
95-14-7

**RTECS**
DM1225000

**TSCA**
TSCA 8(b) inventory: Benzotriazole-1,2,3

**CI#**
Not available.

**NFPA**
1 2 0

**Health Hazard**
2

**Fire Hazard**
1

**Reactivity**
0

**Personal Protective Equipment**
See Section 15.

**Section 2. Composition and Information on Ingredients**

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
<th>CEIL (mg/m³)</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Benzotriazole-1,2,3</td>
<td>95-14-7</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

**Toxicological Data on Ingredients**

**Benzotriazole-1,2,3:**

- **ORAL (LD50):**
  - Acute: 560 mg/kg [Rat].
  - 615 mg/kg [Mouse].
  - 500 mg/kg [Guinea pig].

- **DERMAL (LD50):**
  - Acute: >1000 mg/kg [Rat].

- **DUST (LC50):**
  - Acute: 1910 mg/m³ 3 hours [Rat].

**Section 3. Hazards Identification**

**Potential Acute Health Effects**
Hazardous in case of eye contact (irritant), of ingestion. Slightly hazardous in case of skin contact (irritant, permeator), of inhalation.

Continued on Next Page
**Benzotriazole**

**Potential Chronic Health Effects**
- **CARCINOGENIC EFFECTS:** Not available.
- **MUTAGENIC EFFECTS:** Mutagenic for bacteria and/or yeast.
- **TERATOGENIC EFFECTS:** Not available.
- **DEVELOPMENTAL TOXICITY:** Not available.

The substance may be toxic to the nervous system, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

**Section 4. First Aid Measures**

**Eye Contact**
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

**Skin Contact**
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Serious Skin Contact**
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation**
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Serious Inhalation**
Not available.

**Ingestion**
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion**
Not available.

**Section 5. Fire and Explosion Data**

**Flammability of the Product**
May be combustible at high temperature.

**Auto-Ignition Temperature**
400°C (752°F)

**Flash Points**

**Flammable Limits**
Not available.

**Products of Combustion**
These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...).

**Fire Hazards in Presence of Various Substances**
Slightly flammable to flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

**Explosion Hazards in Presence of Various Substances**
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions**
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

**Special Remarks on Fire Hazards**
Not available.

**Special Remarks on Explosion Hazards**
May EXPLODE during vacuum distillation. Dust may form an explosion hazard. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

**Continued on Next Page**
Section 6. Accidental Release Measures

Small Spill
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions
Keep away from heat. Keep away from sources of ignition. Do not ingest. Do not breathe dust. Avoid contact with eyes. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, metals.

Storage
Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits
STEL: 5 (mg/m$^3$) [Russia] [1993] SKIN
Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical state and appearance</th>
<th>Solid. (Powdered solid. Granular solid.)</th>
<th>Odor</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>119.13 g/mole</td>
<td>Taste</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH (1% soln/water)</td>
<td>Not available.</td>
<td>Color</td>
<td>White to Tan</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>204°C (399.2°F) @ 15 mm Hg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting Point</td>
<td>94°C (201.2°F) - 99 C.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Temperature</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>4.1 (Air = 1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volatility</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water/Oil Dist. Coeff.</td>
<td>The product is more soluble in oil; log(oil/water) = 1.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ionicity (in Water)</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispersion Properties</td>
<td>See solubility in water.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility</td>
<td>Partially soluble in cold water</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Solubility in water: 20 g/l @ 25 C.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Soluble in benzene, toluene, chloroform, ethanol, N,N-dimethylformamide.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Continued on Next Page
### Section 10. Stability and Reactivity Data

<table>
<thead>
<tr>
<th>Stability</th>
<th>The product is stable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instability Temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Conditions of Instability</td>
<td>Excess heat, dust generation, ignition sources, incompatible materials</td>
</tr>
<tr>
<td>Incompatibility with various substances</td>
<td>Reactive with oxidizing agents, metals.</td>
</tr>
<tr>
<td>Corrosivity</td>
<td>Non-corrosive in presence of glass.</td>
</tr>
<tr>
<td>Special Remarks on Reactivity</td>
<td>Incompatible with heavy metals.</td>
</tr>
<tr>
<td>Special Remarks on Corrosivity</td>
<td>Material can decompose violently above 285 C. Avoid temperatures above 185 C.</td>
</tr>
<tr>
<td>Polymerization</td>
<td>Will not occur.</td>
</tr>
</tbody>
</table>

### Section 11. Toxicological Information

#### Routes of Entry
- Inhalation
- Ingestion

#### Toxicity to Animals
**WARNING:** THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE.
- Acute oral toxicity (LD50): 500 mg/kg [Guinea pig].
- Acute dermal toxicity (LD50): >1000 mg/kg [Rat].
- Acute toxicity of the dust (LC50): 1910 mg/m$^3$ 3 hours [Rat].

#### Chronic Effects on Humans
- MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. May cause damage to the following organs: the nervous system, central nervous system (CNS).

#### Other Toxic Effects on Humans
- Hazardous in case of ingestion.
- Slightly hazardous in case of skin contact (irritant, permeator), of inhalation.

#### Special Remarks on Toxicity to Animals
- Lowest Published Lethal Dose:
  - LDL [Rabbit] - Route: Skin; Dose 450 mg/kg

#### Special Remarks on Chronic Effects on Humans
- May affect genetic material
- May cause cancer based on animal data. Inadequate evidence for carcinogenicity in humans.

#### Special Remarks on other Toxic Effects on Humans
- Acute Potential Health Effects:
  - Skin: May cause skin irritation. It may be absorbed through the skin. May be harmful if absorbed through skin.
  - Eyes: Causes eye irritation.
  - Inhalation: May cause respiratory tract irritation. It may affect respiration (Dyspnea).
  - Ingestion: May cause digestive tract irritation, nausea. May be harmful if swallowed. May affect behavior/central nervous (central nervous system effects including headache, dizziness, fatigue), and autonomic nervous system.
  - Chronic Potential Health Effects:
    - Ingestion: Prolonged or repeated ingestion may affect blood (Leukopenia, normocytic anemia), and endocrine system.

### Section 12. Ecological Information

#### Ecotoxicity
- Not available.

#### BOD5 and COD
- Not available.

#### Products of Biodegradation
- Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

#### Toxicity of the Products of Biodegradation
- The products of degradation are less toxic than the product itself.

#### Special Remarks on the Products of Biodegradation
- Not available.

**Continued on Next Page**
**Section 13. Disposal Considerations**

**Waste Disposal**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

**Section 14. Transport Information**

**DOT Classification**

Not a DOT controlled material (United States).

**Identification**

Not applicable.

**Special Provisions for Transport**

Not applicable.

**DOT (Pictograms)**

![DOT symbol]

**Section 15. Other Regulatory Information and Pictograms**

**Federal and State Regulations**

Massachusetts RTK: Benzotriazole

TSCA 8(b) inventory: Benzotriazole

TSCA 8(d) H and S data reporting: Benzotriazole: April 13, 1989 to Dec. 19, 1995

**California Proposition 65 Warnings**

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.

California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

**Other Regulations**


EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

**Other Classifications**

**WHMIS (Canada)** CLASS D-2B: Material causing other toxic effects (TOXIC).

**DSCL (EEC)**

R5- Heating may cause an explosion.

R22- Harmful if swallowed.

R36/37/38- Irritating to eyes, respiratory system and skin.

**S26-** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**S36/37/39-** Wear suitable protective clothing, gloves and eye/face protection.

**S46-** If swallowed, seek medical advice immediately and show this container or label.

**HMIS (U.S.A.)**

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Flammability</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
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<table>
<thead>
<tr>
<th>Fire Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<table>
<thead>
<tr>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
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</table>

<table>
<thead>
<tr>
<th>Personal Protection</th>
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<tr>
<td>E</td>
</tr>
</tbody>
</table>

**National Fire Protection Association (U.S.A.)**

Health 2

Reactivity 0

Specific hazard

**WHMIS (Canada) (Pictograms)**

![WHMIS symbol]

**DSCL (Europe) (Pictograms)**

![DSCL symbol]
Protective Equipment

Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Splash goggles.

Lab coat.

Gloves.

Section 16. Other Information

MSDS Code

B3428

References

Not available.

Other Special Considerations

Not available.


Verified by Sonia Owen.


CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.