Material Safety Data Sheet
Benzimidazole, 98%

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Benzimidazole, 98%
**Synonyms:** 3-Azaindole; o-Benzimidazole; 1,3-Benzodiazole; Benzoimidazole

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>51-17-2</td>
<td>Benzimidazole</td>
<td>100.0</td>
<td>200-081-4</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: slightly beige powder.

**Caution!** May be harmful if swallowed. The toxicological properties of this material have not been fully investigated.

**Target Organs:** None.

**Potential Health Effects**

**Eye:** No information regarding eye irritation and other potential effects was found.

**Skin:** No information regarding skin irritation and other potential effects was found.

**Ingestion:** The toxicological properties of this substance have not been fully investigated.

**Inhalation:** The toxicological properties of this substance have not been fully investigated.

**Chronic:** No information found.

Section 4 - First Aid Measures

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**Skin:** Get medical aid immediately. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

**Ingestion:** If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Notes to Physician:** Treat symptomatically.
**Section 5 - Fire Fighting Measures**

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

**Extinguishing Media:** In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam.

**Flash Point:** Not available.

**Autoignition Temperature:** Not available.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: ; Flammability: ; Instability:

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**Section 6 - Accidental Release Measures**

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal.

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**Section 7 - Handling and Storage**

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

**Storage:** Store in a cool, dry place. Keep container closed when not in use.

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**Section 8 - Exposure Controls, Personal Protection**

**Engineering Controls:** Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benimidazole</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Benimidazole: No OSHA Vacated PELs are listed for this chemical.

**Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to minimize contact with skin.

**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

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**Section 9 - Physical and Chemical Properties**
Physical State: Powder
Appearance: slightly beige
Odor: None reported.
\textbf{pH}: Not available.
\textbf{Vapor Pressure}: Not available.
\textbf{Vapor Density}: Not available.
\textbf{Evaporation Rate}: Not available.
\textbf{Viscosity}: Not available.
\textbf{Boiling Point}: > 360 deg C
\textbf{Freezing/Melting Point}: 172 - 174 deg C
\textbf{Decomposition Temperature}: Not available.
\textbf{Density}: soluble
\textbf{Solubility}: soluble
\textbf{Specific Gravity/Density}: Not available.
\textbf{Molecular Formula}: C7H6N2
\textbf{Molecular Weight}: 118.14

\textbf{Section 10 - Stability and Reactivity}

\textbf{Chemical Stability}: Stable under normal temperatures and pressures.
\textbf{Conditions to Avoid}: Incompatible materials, strong oxidants.
\textbf{Incompatibilities with Other Materials}: Strong oxidizing agents.
\textbf{Hazardous Decomposition Products}: Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, nitrogen.
\textbf{Hazardous Polymerization}: Has not been reported.

\textbf{Section 11 - Toxicological Information}

\textbf{RTECS#}: 
\textbf{CAS#} 51-17-2: DD5425000
\textbf{LD50/LC50}:
\textbf{CAS#} 51-17-2: 
  Oral, mouse: LD50 = 2910 mg/kg;

\textbf{Carcinogenicity}:
\textbf{CAS#} 51-17-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

\textbf{Epidemiology}: No data available.
\textbf{Teratogenicity}: No data available.
\textbf{Reproductive Effects}: No data available.
\textbf{Mutagenicity}: Some of the heterocyclic derivatives were mutagenic.
\textbf{Neurotoxicity}: No data available.
\textbf{Other Studies}:

\textbf{Section 12 - Ecological Information}

No information available.

\textbf{Section 13 - Disposal Considerations}
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

### Section 14 - Transport Information

<table>
<thead>
<tr>
<th>IATA</th>
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<tbody>
<tr>
<td><strong>Shipping Name:</strong></td>
<td>Not regulated as a hazardous material</td>
</tr>
<tr>
<td><strong>Hazard Class:</strong></td>
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<tr>
<td><strong>UN Number:</strong></td>
<td></td>
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<tr>
<td><strong>Packing Group:</strong></td>
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</tbody>
</table>

### Section 15 - Regulatory Information

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**
Not available.

**Risk Phrases:**

**Safety Phrases:**

S 24/25 Avoid contact with skin and eyes.

### Section 16 - Additional Information

**MSDS Creation Date:** 9/02/1997

**Revision #3 Date:** 10/03/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall INDO GULF GROUP be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if INDO GULF GROUP has been advised of the possibility of such damages.