Material Safety Data Sheet
Sodium Azide

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Sodium Azide
**Synonyms:** Sodium salt of hydrazoic acid; Smite; Azium.

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>26628-22-8</td>
<td>Sodium azide</td>
<td>&gt;99</td>
<td>247-852-1</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>&lt;0.5</td>
<td>231-791-2</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

Appearance: colorless to white crystals.
**Danger!** May be fatal if inhaled, absorbed through the skin or swallowed. Contact with acids liberates very toxic and explosive gas, hydrazoic acid vapor. Reacts with many heavy metals to form explosive compounds. Forms hydrazoic acid in water which volatilizes readily at 99°F. Hydrazoic acid is a colorless, volatile, highly toxic and highly explosive liquid with a characteristic odor, which has been described as sickening. Heating may cause an explosion. Causes eye, skin, and respiratory tract irritation. May cause cardiac disturbances. Heat sensitive. Dangerous for the environment.

**Target Organs:** Central nervous system, lungs, cardiovascular system, eyes, skin.

**Potential Health Effects**

**Eye:** Causes eye irritation. Contact with dust or vapor may cause systemic toxic
**Skin:** Causes skin irritation. May be fatal if absorbed through the skin. If absorbed, causes symptoms similar to those of ingestion.
**Ingestion:** May be fatal if swallowed. Causes gastrointestinal irritation with nausea, vomiting and diarrhea. Sodium azide may cause hypotension (abnormally low blood pressure), tachycardia (rapid heart rate), tachypnea (quick, shallow breathing), hypothermia (low body temperature), convulsions and severe headache.
**Inhalation:** May be fatal if inhaled. Dust is irritating to the respiratory tract. May cause effects similar to those described for ingestion. Rapidly absorbed. The vapor of hydrazoic acid may be present where sodium azide is handled. Symptoms of acute exposure to hydrazoic acid include eye irritation, headache, dramatic decrease in blood pressure, weakness, pulmonary edema, and collapse.
**Chronic:** Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion.

Section 4 - First Aid Measures

**Eyes:** In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid.
**Skin:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

**Ingestion:** Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

**Inhalation:** POISON material. If inhaled, get medical aid immediately. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Notes to Physician:** Treat symptomatically and supportively.

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### 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. Vapors may form an explosive mixture with air. Water Reactive. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Forms explosion sensitive compounds with some metals such as lead and copper. Form hydrazoic acid vapor in contact with acid or water. Hydrazoic acid vapor is highly toxic and a dangerous explosive. Hydrazoic acid is shock sensitive.

**Extinguishing Media:** Use dry chemical, carbon dioxide, or alcohol-resistant foam. Do NOT get water inside containers.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not available.

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

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 4; Flammability: 1; Instability: 3; Special Hazard: -W-

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### Section 6 - Accidental Release Measures

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

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Remove all sources of ignition. Provide ventilation. Do not flush down the drain. Over a period of time, sodium azide may react with copper, lead, brass, or solder in plumbing systems to form an accumulation of the highly explosive compounds of lead azide and copper azide.

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### Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Use only with adequate ventilation. Do not use with metal spatula or other metal items.

**Storage:** Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from water. Keep away from acids. Do not store in metal containers. Keep containers tightly closed. Some have recommended storage in an explosion-proof refrigerator.

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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 below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**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>Sodium azide</td>
<td>0.29 mg/m³ Ceiling (as sodium azide); 0.11 ppm Ceiling (as hydrazoic acid, vapor)</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Water</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Hydrazoic acid</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

**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 to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

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**Section 9 - Physical and Chemical Properties**

- **Physical State:** Crystals
- **Appearance:** colorless to white
- **Odor:** odorless
- **pH:** Not available.
- **Vapor Pressure:** Negligible.
- **Vapor Density:** 2.2
- **Evaporation Rate:** negligible
- **Viscosity:** Not applicable.
- **Boiling Point:** Not applicable.
- **Freezing/Melting Point:** 527 deg F (dec)
- **Decomposition Temperature:** 527 deg F
- **Solubility:** Soluble.
- **Specific Gravity/Density:** 1.85
- **Molecular Formula:** N₃Na
- **Molecular Weight:** 65.01

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**Section 10 - Stability and Reactivity**

- **Chemical Stability:** Stable. However, may decompose if heated. May be shock-sensitive.
- **Conditions to Avoid:** Mechanical shock, light, contact with water, temperatures above 275°C.
- **Incompatibilities with Other Materials:** Acids, some metals, oxidizing agents.
- **Hazardous Decomposition Products:** Nitrogen oxides, sodium oxide, hydrazoic acid.
- **Hazardous Polymerization:** Has not been reported.

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**Section 11 - Toxicological Information**
RTECS#: 
CAS# 26628-22-8: VY8050000
CAS# 7732-18-5: ZC0110000
CAS# 7782-79-8: MW2800000

LD50/LC50:
CAS# 26628-22-8:
  Inhalation, mouse: LC50 = 32400 ug/m3;
  Inhalation, rat: LC50 = 37 mg/m3;
  Oral, mouse: LD50 = 27 mg/kg;
  Oral, rat: LD50 = 27 mg/kg;
  Skin, rabbit: LD50 = 20 mg/kg;
  Skin, rat: LD50 = 50 mg/kg;
CAS# 7732-18-5:
  Oral, rat: LD50 = >90 mL/kg;
CAS# 7782-79-8:
  Inhalation, mouse: LC50 = 34 mg/m3;
  Oral, rat: LD50 = 33 mg/kg;

Carcinogenicity:
CAS# 26628-22-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7782-79-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.
Teratogenicity: No information found.
Reproductive Effects: No information available.
Mutagenicity: See actual entry in RTECS for complete information.
Neurotoxicity: See actual entry in RTECS for complete information.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 0.8-1.6 mg/L; 96 Hr.; 13 degrees C Fish:
  Bluegill/Sunfish: LC50 = 0.7-0.8 mg/L; 96 Hr.; 18 degrees C No data available.
Environmental: Aquatic Fate: Photolysis of sodium azide may result in metal
  nitrides initially, with the eventual formation of the free metal and nitrogen gas.
Physical: No information available.
Other: Harmful to aquatic life in very low concentrations.

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: CAS# 26628-22-8: waste number P105.
RCRA U-Series: None listed.

Section 14 - Transport Information

| IATA | SODIUM AZIDE |
Hazard Class: 6.1
UN Number: UN1687
Packing Group: II

Section 15 - Regulatory Information

Hazard Symbols:
T+ N

Risk Phrases:
R 28 Very toxic if swallowed.
R 32 Contact with acids liberates very toxic gas.
R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 60 This material and its container must be disposed of as hazardous waste.
S 28A After contact with skin, wash immediately with plenty of water.
S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

Section 16 - Additional Information

MSDS Creation Date: 7/01/2000
Revision #10 Date: 4/05/2004

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.