1. CHEMICAL IDENTITY

**Chemical Name:** Stibine

**Chemical Classification:** Flammable, Toxic

**Synonyms:** Antimony hydride, Hydrogen antimonide, Antimony trihydride

**Formula:** H₃Sb

**CAS No:** 7803-52-3

**UN No:** 2676

**Hazchem Code:** 2PE

<table>
<thead>
<tr>
<th>Regulated Identification</th>
<th>C.A.S. No.</th>
<th>HAZARDOUS INGREDIENTS</th>
<th>C.A.S. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stibine</td>
<td>7803-52-3</td>
<td>3</td>
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<td>4</td>
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</tbody>
</table>

2. PHYSICAL / CHEMICAL DATA

**Boiling Pt. °C:** -18.4

**Melting Pt °C:** -88

**Vapour Pressure @ 35°C mmHg:**

**Vapour Density (Air =1):** 4.4

**Solubility in water at 30°C g/100ml:** 4.1 g/L at 0 deg C

**Appearance:** A colourless gas

**Odour:** A disagreeable odour.

**Others:** Soluble in alcohol, carbon disulphide and other organic solvents.

**Specific Gravity (Water =1):** 2.204 at boiling point

**pH:**

3. FIRE / EXPLOSION HAZARD DATA

**Flammability:** Yes

**TDG Flammability:**

**LEL:**

**UEL:**

**Flash Point °C in OC:**

**Flash Point °C in CC:**

**Autoignition Temperature °C:**

**Explosion sensitivity to impact:**

**Explosion sensitivity to static Electricity:**

**Hazardous Combustion Products:** Antimony and hydrogen

**Hazardous Polymerization:** Will not occur

**Combustible Liquid:** No

**Explosive Material:** No

**Corrosive Material:** No

**Flammable Material:** Yes

**Oxidiser:** No

**Others:**

**Pyrophoric Material:** No

**Organic Peroxide:** No

4. REACTIVITY DATA

**Chemical Stability:** Decomposes slowly on standing at room temperature; thermally less stable than arsine.

**Incompatibility with other material:** Avoid contact with acids, halogenated hydrocarbons, oxidizers, moisture, chlorine, ozone, ammonia. Explosive reaction with ammonia plus heat; chlorine; concentrated nitric acid; and ozone. Stibine and concentrated nitric acid explode.
Reactivity: Reacts vigorously with oxidising agents and violently with chlorine, nitric acid and ozone.

Hazardous Reaction Products

5. HEALTH HAZARD DATA

Routes of entry: Inhalation, Ingestion, Skin and Eyes

Effects of Exposure / Symptoms:
Inhalation: Pulmonary irritation is a possible effect based principally on results in animal studies. Ingestion: Nausea and abdominal pain are common. Skin: May be toxic/fatal if absorbed through skin. Contact may cause burns, severe injury and/or frostbite. Eye: Contact may cause burns, severe injury and/or frostbite.

Emergency Treatment:
Inhalation: Move victim to fresh air. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method

Skin: Remove contaminated clothing and wash exposed area thoroughly with soap and water. A physician should examine the area if irritation or pain persists.

Eyes: Irrigate exposed eyes with copious amounts of tepid water for at least 15 minutes. If irritation, pain, swelling, lacrimation, or photophobia persist, the patient should be seen in a health care facility.

Ingestion: Seek medical assistance.

<table>
<thead>
<tr>
<th>LD50 (oral-rat) mg/kg:</th>
<th>0.1 ppm (0.5 mg/m3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 (rat) mg/kg:</td>
<td>0.1 ppm (0.5 mg/m3)</td>
</tr>
<tr>
<td>Permissible Exposure Limit:</td>
<td>0.1 ppm (0.5 mg/m3)</td>
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<tr>
<td>Odour Threshold:</td>
<td>TLV (ACGIH) : 0.1 ppm (0.5 mg/m3)</td>
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</tbody>
</table>

6. PREVENTIVE MEASURES

Personal Protective Equipment: Wear appropriate protective gloves, clothing and goggles -- as recommended by the manufacturer. Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

Handling: All chemicals should be considered hazardous. Avoid direct physical contact. Use appropriate, approved safety equipment. Untrained individuals should not handle this chemical or its container. Handling should occur in a chemical fume hood.

Storage: Keep in a cool, dry, dark location in a tightly sealed container or cylinder. Keep away from incompatible materials, ignition sources and untrained individuals. Secure and label area. Protect containers/cylinders from physical damage.

Precautions:

7. EMERGENCY / FIRST AID MEASURES

FIRE:

Fire Extinguishing Media:

Special Procedure:

Unusual Hazards:

EXPOSURE: First Aid Measures:

Inhalation: Move victim to fresh air. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method
If hemolysis develops, mannitol and alkaline-induced diuresis should be instituted. In case of acute tubular necrosis, hemodialysis may be considered.

If stibine is leaked or released, ventilate area of leak to disperse gas.

Antidotes / Dosages: If hemolysis develops, mannitol and alkaline-induced diuresis should be instituted. In case of acute tubular necrosis, hemodialysis may be considered.

SPILLS:

Steps To Be Taken: If stibine is leaked or released, ventilate area of leak to disperse gas.

Waste Disposal Method:

8. ADDITIONAL INFORMATION / REFERENCES

Stibine is used as a chemical intermediate and in chemical synthesis. The gas liberates from alloys of antimony compounds which come in contact with reducing acids, during charging of storage batteries and from purification of antimony by electrolysis. Process enclosures, local exhaust ventilation and dilution ventilation are the control methods.

9. MANUFACTURERS / SUPPLIERS DATA

NAME OF FIRM: Contact person
MAILING ADDRESS: in Emergency:
TELEPHONE / TELEX NOS: Local Bodies involved:
TELEGRAPHIC ADDRESS: Standard Packing:
OTHERS: Trem Card Details / Ref:

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