BROMOBENZENE

1. Product Identification

   Synonyms: Monobromobenzene, phenyl bromide
   CAS No.: 108-86-1
   Molecular Weight: 157.01
   Chemical Formula: C₆H₅Br
   Product Codes: 2711

2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No</th>
<th>Percent</th>
<th>Hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromobenzene</td>
<td>108-86-1</td>
<td>99 - 100%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3. Hazards Identification

   Emergency Overview
   -----------------------------
   WARNING! HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY AFFECT LIVER AND CENTRAL NERVOUS SYSTEM. FLAMMABLE LIQUID AND VAPOR. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

   J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)
   ---------------------------------------------------------------------------
   Health Rating: 2 - Moderate
   Flammability Rating: 2 - Moderate
   Reactivity Rating: 1 - Slight
   Contact Rating: 2 - Moderate
   Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER.
   Storage Color Code: Red (Flammable)
Potential Health Effects

Inhalation:
Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. Affects central nervous system causing dizziness, incoordination and unconsciousness. May be absorbed into the bloodstream with symptoms similar to ingestion.

Ingestion:
May cause abdominal pain, nausea, vomiting, diarrhea, headache, dullness, central nervous system effects and liver damage. Estimated lethal human dose is 50 - 500 mg/kg.

Skin Contact:
Causes irritation to skin. Symptoms include redness, itching, and pain. May be absorbed through the skin with possible systemic effects.

Eye Contact:
Causes irritation, redness, and pain.

Chronic Exposure:
No information found.

Aggravation of Pre-existing Conditions:
Persons with pre-existing liver damage may be more susceptible to the effects of this material.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:
Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:
Wash skin with soap or mild detergent and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Call a physician.

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

5. Fire Fighting Measures

Fire:
Flash point: 51°C (124°F)
Autoignition temperature: 566°C (1051°F)

Explosion:
Above the flash point, explosive vapor-air mixtures may be formed. Vapors can flow along surfaces to distant ignition source and flash back. Contact with strong oxidizers may cause fire. Sealed containers may rupture when heated. Sensitive to static discharge.

Fire Extinguishing Media:
Water spray, dry chemical, alcohol foam, or carbon dioxide. Use water spray to blanket fire, cool fire exposed containers, and to flush non-ignited spills or vapors away from 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.
6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e.g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures.

J. T. Baker SOLUSORB(R) solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
None established.

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):
For conditions of use where exposure to the substance is apparent, consult an industrial hygienist. 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.

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Clear, colorless liquid.

Odor:
Characteristic aromatic odor.

Solubility:
Insoluble in water.

Specific Gravity:
1.50 @ 20C/4C

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

**Boiling Point:**
156C (313F)

**Melting Point:**
-31C (-24F)

**Vapor Density (Air=1):**
5.41

**Vapor Pressure (mm Hg):**
10 @ 40C (104F)

**Evaporation Rate (BuAc=1):**
No information found.

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### 10. Stability and Reactivity

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

**Hazardous Decomposition Products:**
Oxides of carbon as well as ionic or oxidized halogen.

**Hazardous Polymerization:**
Will not occur.

**Incompatibilities:**
Strong oxidizers.

**Conditions to Avoid:**
Heat, flames, ignition sources and incompatibles.

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### 11. Toxicological Information

Oral rat LD50: 2699 mg/kg. Inhalation rat LC50: 20411 mg/kg. Investigated as a mutagen.

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**Cancer Lists**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Known</th>
<th>Anticipated</th>
<th>IARC Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromobenzene (108-86-1)</td>
<td>No</td>
<td>No</td>
<td>None</td>
</tr>
</tbody>
</table>

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### 12. Ecological Information

**Environmental Fate:**
No information found.

**Environmental Toxicity:**
No information found.

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### 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste 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.)

Proper Shipping Name: BROMOBENZENE
Hazard Class: 3
UN/NA: UN2514
Packing Group: III
Information reported for product/size: 500ML

International (Water, I.M.O.)

Proper Shipping Name: BROMOBENZENE
Hazard Class: 3.3
UN/NA: UN2514
Packing Group: III
Information reported for product/size: 500ML

International (Air, I.C.A.O.)

Proper Shipping Name: BROMOBENZENE
Hazard Class: 3.3
UN/NA: UN2514
Packing Group: III
Information reported for product/size: 500ML

15. Regulatory Information

---\Chemical Inventory Status - Part 1\-----------------------------------------------
Ingredient                              TSCA  EC   Japan  Australia
-----------------------------------------------  ----  ---  -----  ---------
Bromobenzene (108-86-1)        Yes  Yes   Yes      Yes

---\Chemical Inventory Status - Part 2\-----------------------------------------------
Ingredient                              Korea  DSL   NDSL  Phil.
-----------------------------------------------  -----  ---   ----  ----- 
Bromobenzene (108-86-1)        Yes   Yes   No     Yes

---\Federal, State & International Regulations - Part 1\-----------------------------
Ingredient                              RQ   TPQ    List  Chemical Catg.
-----------------------------------------  ---   -----   ----  --------------
Bromobenzene (108-86-1)                    No    No      No         No

---\Federal, State & International Regulations - Part 2\-----------------------------
Ingredient                              CERCLA   261.33     8(d)
-----------------------------------------  ------     ------    ------
Bromobenzene (108-86-1)                    No         No         No

Chemical Weapons Convention:  No     TSCA 12(b):  No     CDTA:  No
SARA 311/312:  Acute: Yes    Chronic: No    Fire: Yes    Pressure: No
Reactivity: No (Pure / Liquid)

Australian Hazchem Code: 2[Y]
Poison Schedule: No information found.
WHIMIS: 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: 2 Flammability: 2 Reactivity: 0
Label Hazard Warning: WARNING! HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY AFFECT LIVER AND CENTRAL NERVOUS SYSTEM. FLAMMABLE LIQUID AND VAPOR. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.
Label Precautions: Wash thoroughly after handling. Avoid contact with eyes, skin and clothing. Avoid breathing vapor. Keep container closed. Use only with adequate ventilation. Keep away from heat, sparks and flame.
Label First Aid: If swallowed, give large amounts of water to drink. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases call a physician.
Product Use: Laboratory Reagent.

Disclaimer:
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Prepared by: Environmental Health & Safety