

Material Safety Data Sheet

Bromobenzene

ACC# 03420

Section 1 - Chemical Product and Company Identification

MSDS Name: Bromobenzene

Catalog Numbers: AC106680000, AC106680010, AC106682500, B253-1

Synonyms: Monobromobenzene; Phenyl bromide; Bromobenzol.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

| CAS# | Chemical Name | Percent | EINECS/ELINCS |
|----------|---------------|---------|---------------|
| 108-86-1 | Bromobenzene | 99 | 203-623-8 |

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: 51 deg C.

Warning! Flammable liquid and vapor. Causes eye, skin, and respiratory tract irritation. May be absorbed through intact skin. May cause liver damage. Marine pollutant.

Target Organs: Liver, respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation. May be absorbed through the skin in harmful amounts. If absorbed, may cause liver injury.

Ingestion: Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause central nervous system depression.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause narcotic effects in high concentration. May cause liver abnormalities. Vapors may cause dizziness or suffocation. May cause blood changes.

Chronic: Chronic exposure may cause liver damage.

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.

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

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If

breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

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. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Water may be ineffective. Do NOT use straight streams of water.

Flash Point: 51 deg C (123.80 deg F)

Autoignition Temperature: 565 deg C (1,049.00 deg F)

Explosion Limits, Lower: .5%

Upper: 2.5%

NFPA Rating: (estimated) Health: 2; Flammability: 2; Instability: 0

Section 6 - Accidental Release Measures

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

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Avoid breathing vapor or mist.

Storage: Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low. Ventilation fans and other electrical service must be non-sparking and have an explosion-proof design.

Exposure Limits

| Chemical Name | ACGIH | NIOSH | OSHA - Final PELs |
|---------------|-------------|-------------|-------------------|
| Bromobenzene | none listed | none listed | none listed |

OSHA Vacated PELs: Bromobenzene: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

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.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: colorless
Odor: aromatic odor
pH: Not available.
Vapor Pressure: 3.3 mm Hg @ 20 deg C
Vapor Density: 5.41 (air=1)
Evaporation Rate: Not available.
Viscosity: 1.124 cP 20 deg C
Boiling Point: 155 deg C
Freezing/Melting Point: -31 deg C
Decomposition Temperature: Not available.
Solubility: Insoluble.
Specific Gravity/Density: 1.49
Molecular Formula: C₆H₅Br
Molecular Weight: 157.01

Section 10 - Stability and Reactivity

Chemical Stability: Stable.
Conditions to Avoid: Ignition sources, excess heat, confined spaces.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, hydrogen bromide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 108-86-1: CY9000000
LD50/LC50:
CAS# 108-86-1:
Inhalation, mouse: LC50 = 21 gm/m³/2H;
Inhalation, rat: LC50 = 20411 mg/m³;
Oral, mouse: LD50 = 2700 mg/kg;
Oral, rabbit: LD50 = 3300 mg/kg;
Oral, rat: LD50 = 2383 mg/kg;

Carcinogenicity:
CAS# 108-86-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: No information found

Reproductive Effects: No information found

Mutagenicity: DNA repair(Escherichia coli) = 250 mg/L Micronucleus test(Intraperitoneal,mouse) = 125 mg/kg/24H

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Bacteria: Phytobacterium phosphoreum: EC50 = 9.46 mg/L; 30 minutes; Microtox test; 15 degrees C
No data available.

Environmental: Bromobenzene is not biodegraded in screening studies using an activated sludge as inoculum; 0% degradation was reported after four weeks. In water, bromobenzene may adsorb to sediment or particulate matter based on its estimated Koc value of 268. This compound will volatilize from water surfaces given its experimental Henry's Law constant. Estimated half-lives for a model river and model lake are 4 hours and 5 days, respectively. Bioconcentration in aquatic organisms should be low to moderate.

Physical: If released to the the atmosphere, bromobenzene will exist in the vapor phase in the ambient atmosphere, based on a measured vapor pressure of 4.18 mm Hg at 25 deg C. Vapor-phase bromobenzene is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals with a half-life of about 21 days. An estimated Koc value of 268 suggests that bromobenzene will have moderate mobility in soil. Volatilization from moist soil surfaces should occur.

Other: No information available.

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

| | US DOT | Canada TDG |
|-----------------------|--------------|--------------|
| Shipping Name: | BROMOBENZENE | Bromobenzene |
| Hazard Class: | 3 | 3 |
| UN Number: | UN2514 | UN2514 |
| Packing Group: | III | III |

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 108-86-1 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 108-86-1: Effective 6/1/87, Sunset 12/19/95

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 108-86-1: immediate, delayed, fire.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 108-86-1 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XI N

Risk Phrases:

R 10 Flammable.

R 38 Irritating to skin.

R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 108-86-1: 2

Canada - DSL/NDSL

CAS# 108-86-1 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B3, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 5/20/1999

Revision #4 Date: 3/15/2007

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 Fisher 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 Fisher has been advised of the possibility of such damages.