

Benzene-d₆

Section 1. Chemical product and company identifications

Product code: D-0006
Chemical formula: C₆D₆
CAS: 1076-43-3
CAS (unlabelled): 71-43-2
Synonyms: Benzol

Supplier / Manufacturer:

C/D/N Isotopes Inc.
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In case of emergency:

TOXYSKAN HOTLINE: 1-855-780-0599




Section 2. Hazards identifications

GHS (Globally Harmonized System of Classification and Labelling of Chemicals):

GHS Classification:

- Flammable liquids (Category 2)
- Acute toxicity, Oral (Category 4)
- Skin irritation (Category 2)
- Eye irritation (Category 2A)
- Germ cell mutagenicity (Category 1B)
- Carcinogenicity (Category 1A)
- Specific target organ toxicity - repeated exposure (Category 1)
- Aspiration hazard (Category 1)

GHS Label elements:

- Pictograms:   
- Signal word: Danger

Hazards statement:

- H225 Highly flammable liquid and vapour.
- H302 Harmful if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H340 May cause genetic defects.
- H350 May cause cancer
- H372 Causes damage to organs through prolonged or repeated exposure.

Precautionary statement:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P233 Keep container tightly closed.
- P240 Ground and bond container and receiving equipment.
- P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
- P242 Use non-sparking tools.
- P243 Take action to prevent static discharges.
- P261 Avoid breathing mist or vapours.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308 + P313 IF exposed or concerned: Get medical advice/ attention.
- P331 Do NOT induce vomiting.
- P332 + P313 If skin irritation occurs: Get medical advice/ attention.
- P337 + P313 If eye irritation persists: Get medical advice/ attention.
- P362 + P364 Take off contaminated clothing and wash it before reuse.
- P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
- P403 + P235 Store in a well-ventilated place. Keep cool.
- P405 Store locked up.
- P501 Dispose of contents/ container to an approved waste disposal plant.

Section 3. Composition and information on ingredients

<u>Name</u>	<u>CAS</u>	<u>Concentration %</u>
Benzene-d ₆	1076-43-3	99-100%

Section 4. First aid measures

Eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin contact: Wash off with soap and plenty of water. Consult a physician.

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Indication of immediate medical attention and special treatment needed, if necessary: Because of the danger of aspiration, emesis or gastric lavage should not be used unless the risk is justified by the presence of additional toxic substances.

Most important symptoms and effects, both acute and delayed: Difficulty in breathing. Coughing and/ or wheezing. Dizziness. May cause redness and tearing of the eyes. Burning sensation.

Section 5. Firefighting measures

Flammability of the product: Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Products of combustion: Hazardous decomposition products formed under fire conditions: Carbon oxides.

Firefighting media and instructions: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Section 6. Accidental release measures

Personal precautions: Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition.

Environmental precautions: Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Section 7. Handling and storage

Handling: Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking.

Storage: Store at room temperature. Adequate ventilation. Protect from heat and ignition sources.

Section 8. Exposure Controls, Personal Protections

Engineering controls: Use mechanical exhaust or laboratory fumehood to avoid exposure.

Eyes: Safety glasses with side-shields conforming to NIOSH (US) or EN 166 (EU).

Respiratory: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US).

Hands: Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Skin/body: Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Section 9. Physical and chemical properties (unlabelled)

Molecular weight: 78.11 g/mol
Physical status: Liquid
Color: Characteristic
Odour: No data available
Density: 0.874 g/mL
Melting point: 5 °C (41 °F)
Boiling point: 80 °C (176 °F)
Vapour pressure: 100 hPa (75 mmHg) at 20 °C (68 °F)
Vapour density: 2.7 (Air = 1)
Partition coefficient (octanol/water): log Pow: 2.13
Water solubility: 1.8 g/L
Lower explosion limit: 1.2 Vol%
Upper explosion limit: 8 Vol%
Auto-ignition temperature: 498 °C (928 °F)
Flash point: -11°C (12 °F)

Section 10. Stability and reactivity

Stability and reactivity: Stable under recommended storage conditions.
Incompatibility: Strong oxidizing agents.
Products of combustion: Hazardous decomposition products formed under fire conditions: Carbon oxides.
Reactivity conditions: Heat, flames and sparks.

Section 11. Toxicological information (unlabelled)

Toxicological data: Benzene

Information on ingredients:

Name	CAS	LD₅₀	LC₅₀
Benzene	71-43-2	Oral - Rat - 930 mg/kg	Inhalation - Rat - 7 h - 10,000 ppm

Potential acute effects

- **Eyes:** Causes serious eye irritation.
- **Skin:** Causes skin irritation.
- **Inhalation:** No data available.
- **Ingestion:** Harmful if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.

Potential chronic effects

- **Carcinogenic effects:** Carcinogenicity - Human - male - Inhalation. Tumorigenic: Carcinogenic by RTECS criteria. Leukaemia Blood: Thrombocytopenia. Carcinogenicity - Rat - Oral. Tumorigenic: Carcinogenic by RTECS criteria. Endocrine: Tumors. Leukaemia. This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. Human carcinogen. IARC: 1 - Group 1: Carcinogenic to humans (Benzene).
- **Mutagenic effects:** Laboratory experiments have shown mutagenic effects. In vivo tests showed mutagenic effects. Genotoxicity in vitro - Human - lymphocyte. Sister chromatid exchange. Genotoxicity in vitro - Mouse - lymphocyte. Mutation in mammalian somatic cells. Genotoxicity in vivo - Mouse - Inhalation. Sister chromatid exchange.
- **Teratogenic effects:** Developmental Toxicity - Rat - Inhalation. Effects on Embryo or Foetus: Extra embryonic structures (e.g., placenta, umbilical cord). Effects on Embryo or Foetus: Foetotoxicity (except death, e.g., stunted foetus). Developmental Toxicity - Mouse - Inhalation. Effects on Embryo or Foetus: Cytological changes (including somatic cell genetic material). Specific Developmental. Abnormalities: Blood and lymphatic system (including spleen and marrow).
- **Medical conditions aggravated by overexposure:** Cause damage to organs through prolonged or repeated exposure.

Section 12. Ecological information

Ecological data:

Name	Results	Species	Period
Benzene	5.3 mg/l LC50	Oncorhynchus mykiss	96 h
	54 mg/l LC50	Oryzias latipes	48 h
	10 mg/l EC50	Daphnia magna	48 h
	29 mg/l EC50	Selenastrum capricornutum	72 h

Effects on environment: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Mobility: No data available.

Environmental precautions: No data available

Persistence and degradability: Aerobic. Result: 96 % - Readily biodegradable. Method: OECD Test guideline 301F.

Bioaccumulative potential: Leuciscus idus - 3 d - 0.05 mg/l. Bioconcentration factor (BCF): 10.

Section 13. Disposal considerations

Waste disposal: Contact a licensed professional waste disposal service to dispose of this material.

Section 14. Transportation information

Classification DOT/IMDG/IATA label:

Shipping name: Benzene

UN number: UN1114

Class: 3

Packaging group: II

Additional information: None

Section 15. Regulatory information

**UNITED STATES:
NFPA classification**



Health: 2
Flammable: 3
Reactivity: 0
Special conditions: None

Legend: 4: Severe, 3: High, 2: Moderate, 1: Slightly, 0: Not hazardous

U.S. Federal regulations:

California proposition 65 requirements : Listed

SARA section 313 (specific toxic chemical listings) : Listed

CERCLA reportable quantity : Listed

Sections 302-304 reportable quantity : Listed

Community Right-to-Know (Sections 311 and 312) : Listed

Section 16. Additional information

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Elaborated by: Toxyscan Inc., 1-866-780-0599

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This safety data sheet has been prepared in accordance with the OSHA (USA), WHMIS (Canada) / GHS classification rules in effect at the time of writing.