

# SAFETY DATA SHEET



Benzene

**1. Identification of the substance/preparation and company/undertaking****Identification of the substance or preparation****Product name** : Benzene**Chemical name** : Benzene**Chemical formula** : C<sub>6</sub>H<sub>6</sub>**Use of the substance/preparation** : Solvent.**Company/undertaking identification****Manufacturer** : ABCHEM Inc.  
1234, Safety  
Newest, EA  
007-008**Emergency telephone number** : CHEMTREC, U.S. : (800) 424-9300 International: (703) 527-3887**2. Composition/information on ingredients****Substance/preparation** : Substance

Ingredient name	CAS number	%	EC number	Classification
Benzene	71-43-2	70 - 100	200-753-7	F; R11 Carc. Cat. 1; R45 Muta. Cat. 2; R46 T; R48/23/24/25 Xn; R65 Xi; R36/38
<b>See section 16 for the full text of the R-phrases declared above</b>				

Occupational exposure limits, if available, are listed in section 8.

**3. Hazards identification****Classification** : F; R11  
Carc. Cat. 1; R45  
Muta. Cat. 2; R46  
T; R48/23/24/25  
Xn; R65  
Xi; R36/38**Physical/chemical hazards** : Highly flammable.**Human health hazards** : Irritating to eyes and skin.  
May cause cancer.  
May cause heritable genetic damage.  
Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.  
Harmful: may cause lung damage if swallowed.**See section 11 for more detailed information on health effects and symptoms.**

#### 4. First-aid measures

##### First-aid measures

- Eye contact** : Check for and remove any contact lenses. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention.
- Skin contact** : In case of contact, immediately flush skin copiously with water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention.
- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention.
- Ingestion** : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.
- Notes to physician** : No specific antidote, medical staff contact Poisons Information Centre.

**See section 11 for more detailed information on health effects and symptoms.**

#### 5. Fire-fighting measures

##### Extinguishing media

- Suitable** : Use dry chemical, carbon dioxide, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : Highly flammable liquid and vapour. Vapour may cause flash fire. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.
- Hazardous thermal decomposition products** : These products are carbon oxides.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

#### 6. Accidental release measures

- Personal precautions** : Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment. Do not touch or walk through spilt material.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, contain spilt material. For small spills, add absorbent (soil may be used in the absence of other suitable materials) and use a non-sparking or explosion-proof means to transfer material to a sealable, appropriate container for disposal. For large spills, dyke spilt material or otherwise contain material to ensure runoff does not reach a waterway. Place spilt material in an appropriate container for disposal.

#### 7. Handling and storage

- Handling** : Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not ingest. If ingested, do not induce vomiting. Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Wash thoroughly after handling.
- Storage** : Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).
- Packaging materials**
- Recommended** : Use original container.

**8. Exposure controls/personal protection****Ingredient name**

Benzene

**Occupational exposure limits****EH40-WEL (United Kingdom (UK), 1/2005). Skin**

TWA: 1 ppm 8 hour/hours. Form: All forms.

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

**Exposure controls****Occupational exposure controls**

: Use only with adequate ventilation. If user operations generate dust, fumes, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Eye protection**

: Safety glasses.

**Skin protection**

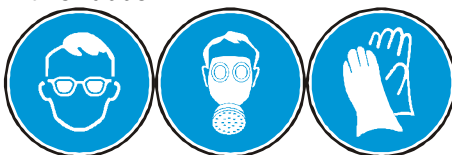
: Lab coat.

**Respiratory protection**

: Vapour respirator.

**Hand protection**

: Nitrile rubber.

**Hygiene measures**

: Wash hands, forearms and face thoroughly after handling compounds and before eating, smoking and using the lavatory and at the end of the day. During formulation, follow good industrial hygiene practice.

**Environmental exposure controls**

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**9. Physical and chemical properties****General information****Appearance****Physical state**

: Liquid.

**Colour**

: Colourless to light yellow.

**Odour**

: Characteristic.

**Important health, safety and environmental information****Boiling point**

: 80°C (176°F)

**Melting point**

: 5.56°C (42°F)

**Flash point**

: Closed cup: -11.15°C (11.9°F).(Pensky-Martens.)

**Relative density**

: 0.879 (Water = 1)

**Solubility**

: Very slightly soluble in cold water, hot water.

**Vapour density**

: 2.77 (Air = 1)

**Evaporation rate**

: 3.5 compared with Butyl acetate.

**Other information****Auto-ignition temperature**

: 591.65°C (1097°F)

**10. Stability and reactivity**

- Stability** : The product is stable.
- Materials to avoid** : Reactive with oxidizing materials, acids and alkalis.

**11. Toxicological information**
**Potential acute health effects**

- Inhalation** : No known significant effects or critical hazards.
- Ingestion** : Aspiration hazard if swallowed. Can enter lungs and cause damage.
- Skin contact** : Irritating to skin.
- Eye contact** : Irritating to eyes.

**Acute toxicity**

Product/ingredient name	Test	Result	Route	Species
Benzene	LD50	930 mg/kg	Oral	Rat
	LD50	4700 mg/kg	Oral	Mouse
	LD50	5700 mg/kg	Oral	Mammal
	LD50	48 mg/kg	Dermal	Mouse

**Potential chronic health effects**

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental toxicity	Impairs fertility
Benzene	Carc. Cat. 1; R45	Muta. Cat. 2; R46	-	-

- Carcinogenicity** : Can cause cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : May cause heritable genetic effects.
- Reproductive toxicity** : No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

- Inhalation** : Toxic: danger of serious damage to health by prolonged exposure through inhalation.
- Ingestion** : No known significant effects or critical hazards.
- Skin** : Toxic: danger of serious damage to health by prolonged exposure in contact with skin.
- Target organs** : Causes damage to the following organs: blood, upper respiratory tract, skin, eyes, bone marrow, central nervous system (CNS), eye, lens or cornea.

**12. Ecological information**
**Ecotoxicity data**

Product/ingredient name	Species	Period	Result
Benzene	Daphnia magna (EC50)	48 hour/hours	9.23 mg/l
	Daphnia magna (EC50)	48 hour/hours	10 mg/l
	Daphnia magna (EC50)	48 hour/hours	11.73 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	5.3 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	5.9 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	9.2 mg/l




**Other ecological information**

- Persistence/degradability**
- Mobility** : Not available.
- Other adverse effects** : No known significant effects or critical hazards.

**13. Disposal considerations**



- Methods of disposal** : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
- Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

**14. Transport information**

Regulatory information	Proper shipping name	Class	UN number	PG	Label
UN / IMDG / IATA Class	BENZENE	3	UN1114	II	
ADNR Class	BENZENE	3	UN1114	II	
ADR/RID Class	BENZENE	3	UN1114	II	
<b>Additional information</b>	<b>UN</b>	<b>IMDG</b>	<b>IATA</b>	<b>ADNR</b>	<b>ADR</b>
	-	-	<b>Passenger and Cargo Aircraft</b> Quantity limitation: 5 L <b>Cargo Aircraft Only</b> Quantity limitation: 60 L <b>Limited Quantities - Passenger Aircraft</b> Quantity limitation: 1 L	-	<b>Hazard identification number</b> 33 <b>Limited quantity</b> LQ4 <b>CEFIC Tremcard</b> 30S1114

**15. Regulatory information**

**EU regulations**

**Hazard symbol/symbols** :  

Highly flammable, Toxic

**Risk phrases** : R11- Highly flammable.  
R45- May cause cancer.  
R46- May cause heritable genetic damage.  
R48/23/24/25- Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.  
R65- Harmful: may cause lung damage if swallowed.  
R36/38- Irritating to eyes and skin.

**Safety phrases** : S53- Avoid exposure - obtain special instructions before use.  
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**Contains** : Benzene 200-753-7

**Product use** : Industrial applications.

**Other EU regulations**

**Restrictions on the Marketing and Use Directive** : Restricted to professional users.

**EU statistical classification (Tariff Code)**

: 2902 20

**16. Other information**

**Full text of R-phrases referred to in sections 2 and 3 - United Kingdom (UK)** : R11- Highly flammable.  
R45- May cause cancer.  
R46- May cause heritable genetic damage.  
R48/23/24/25- Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.  
R65- Harmful: may cause lung damage if swallowed.  
R36/38- Irritating to eyes and skin.

**Full text of classifications referred to in sections 2 and 3 - United Kingdom (UK)** : F - Highly flammable  
Carc. Cat.1 - Carcinogen Category 1  
Muta. Cat.2 - Mutagen Category 2  
T - Toxic  
Xn - Harmful  
Xi - Irritant

**History**

**Date of issue** : 11/30/2005

**Version** : 1

**Notice to reader**

***To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.***

***Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.***

**Version**

1

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