



SDS

COD:BI-HSE-SFO-0250-00

Product Name: BENZENE

Company: Bandar Imam Petrochemical Company-Faravaresh

Catalogue NO: S.B.1114.3

Unit: AR

Section 1: Identification

| | | | | | |
|--|---|---|-----------------|---|--|
| Product Name: Benzene | Other Name: Benzol , Phenylhydride, Carbon oil, Naphtha coal , Cyclohexatriene | | | <input type="checkbox"/> Flammability <input type="checkbox"/> Health <input type="checkbox"/> Instability <input type="checkbox"/> Special hazard | |
| Formula: C ₆ H ₆ | CAS NO: 71-43-2 | UN NO: 1114 | Class: 3 | | |
| Identified Uses: Laboratory chemicals, Manufacture of substances. | | | | | |
| Telephone & Telefax: 0615225-2300 , 2311 | | Address Email : dmoffice@bipc.org.ir | | | |
| Emergency Phone Number: 2222-125-119 / 2242-115 | | | | | |

Section 2: Hazard(s) Identification

| | | |
|--|-------------------------|--|
| Classification of the substance or mixture: Flammable liquids, Skin irritation, Eye irritation, Germ cell mutagenicity, Carcinogenicity, Specific target organ toxicity - repeated exposure, Aspiration hazard, Chronic aquatic toxicity. | | |
| Label elements: Labelling according Regulation (EC) No 1272/2008 Signal word: Danger | Hazard pictogram | |
| | | |
| Hazard statements: Highly flammable liquid and vapour. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause genetic defects. May cause cancer. Causes damage to organs through prolonged or repeated exposure. Harmful to aquatic life with long lasting effects. | | |
| Precautionary statements: Obtain special instructions before use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid release to the environment. IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. IF exposed or concerned: Get medical advice/ attention. Do NOT induce vomiting. | | |
| Other hazards: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. | | |

Section 3: Composition/Information on Ingredients

| Substances: | | | | |
|--------------------|-------------------------------|---------|----------------|---|
| Name | Formula | CAS NO | Concentration% | Classification |
| Benzene | C ₆ H ₆ | 71-43-2 | <= 100 % | Flammable liquids, Skin irritation, Eye irritation, Germ cell mutagenicity, Carcinogenicity, Specific target organ toxicity - repeated exposure, Aspiration hazard, Chronic aquatic toxicity. |

Mixture: Not applicable.

Section 4: First-Aid Measures

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| Description of first aid measures |
| General notes: Consult a physician. Show this safety data sheet to the doctor in attendance. |
| After inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. |
| Following skin contact : Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician. |
| After eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. |
| After swallowing : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. |
| Most important symptoms and effects, both acute and delayed: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11. |
| Indication of any immediate medical attention and special treatment needed: No data available. |

Section 5: Fire-Fighting Measures

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| Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. |
| Special hazards arising from the substance or mixture: Carbon oxides. Flash back possible over considerable distance., Container explosion may occur under fire conditions. |
| Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary. |
| Special protective equipment for firefighters: - |
| Further information: Use water spray to cool unopened containers. |

Section 6: Accidental Release Measures

| |
|---|
| Personal precautions , protective equipment and emergency procedures for: |
| Advice for non-emergency personnel: Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8. |
| Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. |
| Methods and materials for containment and cleaning up: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). |



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Reference to other sections: For disposal see section 13.

Section 7: Handling and Storage

Precautions for safe handling

Advice on safe handling: Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.

Conditions for safe storage, including any incompatibilities: Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Storage class :Flammable liquids.

Specific end use(s): Apart from the uses mentioned in section 1 no other specific uses are stipulated.

Section 8: Exposure Controls/Personal Protection

Engineering measures: Components with workplace control parameters.

Appropriate engineering controls : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment Eye/face protection

Eye/face protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

| Full contact | |
|--------------------|--------------------|
| Glove material | Fluorinated rubber |
| Glove thickness | 0,7 mm |
| Break through time | >480 min |

Body Protection: Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: 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) or CEN (EU) .

Environmental exposure controls : Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Section 9: Physical and Chemical Properties

| | | |
|--|--|----------------------------------|
| From: Liquid. | Relative density, gas (air=1): 2.8 | PH: Not applicable. |
| Color: Colourless, Clear. | Relative density, liquid (water=1): 0.8765 g/cm ³ at 25 °C | FLASH POINT: -10.99 °C |
| Odour: Aromatic odor. | Vapour pressure [20°C]: 9.9 % | AUTOIGNITION TEMP: 498 °C |
| MW: 78 g/mol | Viscosity dynamic: Not applicable. | LEL (V/V %): 1.3 % |
| Solubility in water: .1,88 g/l at 23,5 °C | Oxidizing properties: Not applicable. | UEL (V/V %): 7.1 % |
| Melting point/range: 5.5 °C | Decomposition temperat: Not applicable. | |
| Boiling point/range: 80.1 °C | Explosive properties: Not applicable. | |

Section 10: Stability and Reactivity

Reactivity: No data available.

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions: No data available.

Conditions to avoid: Heat, flames and sparks.

Incompatible materials: acids, Bases, Halogens, Strong oxidizing agents, Metallic salts.

Hazardous decomposition products:



Other decomposition products - No data available In the event of fire see section 5.

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Section 11: Toxicological Information

| Information on toxicological effects | | Endpoint | Species | Exposure route | Value |
|--|------------------|--|---------|---|--------------|
| OT: 61 ppm | TLV-TWA: 5 ppm | LD50 | Oral | swallowing | 930 mg/kg |
| IDLH: 2000 ppm | TLV-STEL: 10 ppm | LC50 | Oral | inhalation | 10000 PPM-7h |
| Sensitisation: might be. | | Carcinogenicity: It may be cause cancer. | | Teratogenicity: might be. | |
| Specific target organ toxicity - single exposure: No data available. | | | | Target organ  Blood  Lungs | |
| Specific target organ toxicity - repeated exposure: No data available. | | | | | |
| Aspiration hazard : May be fatal if swallowed and enters airways. | | | | | |

Further information

Systemic effects:

Nausea, Dizziness, Headache, narcosis, Inhalation of high concentrations of benzene may have an initial stimulatory effect on the central nervous system characterized by exhilaration, nervous excitation and/or giddiness, depression, drowsiness, or fatigue. The victim may experience tightness in the chest, breathlessness, and loss of consciousness. Tremors, convulsions, and death due to respiratory paralysis or circulatory collapse can occur in a few minutes to several hours following severe exposures. Aspiration of small amounts of liquid immediately causes pulmonary edema and hemorrhage of pulmonary tissue. Direct skin contact may cause erythema. Repeated or prolonged skin contact may result in drying, scaling dermatitis, or development of secondary skin infections. The chief target organ is the hematopoietic system. Bleeding from the nose, gums, or mucous membranes and the development of purpuric spots, pancytopenia, leukopenia, thrombocytopenia, aplastic anemia, and leukemia may occur as the condition progresses. The bone marrow may appear normal, aplastic or hyperplastic, and may not correlate with peripheral blood-forming tissues. The onset of effects of prolonged benzene exposure may be delayed for many months or years after the actual exposure has ceased., Blood disorders.

Section 12: Ecological Information (non-mandatory)

Toxicity to fish:

LC50 - Pimephales promelas (fathead minnow) - 15,00 - 32,00 mg/l - 96 h

Persistence and degradability:

 aerobic - Exposure time 28 d
 Result: 96 % - Readily biodegradable
 (OECD Test Guideline 301F)

Bioaccumulative potential: Leuciscus idus (Golden orfe) - 3 d- 0,05 mg/l .

Mobility in soil: No data available.

Other adverse effects: Harmful to aquatic life with long lasting effects.


Section 13: Disposal Considerations (non-mandatory)

Waste treatment-relevant information

Product: Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packing: Dispose of as unused product.

Section 14: Transport Information (non-mandatory)

| Basic shipping description: | | Labelling |
|--|---|---|
| In accordance with TDG | |  |
| Transport hazard class : Flammable Liquid. | | |
| UN proper shipping name: BENZENE | UN NO: 1114 | Transport hazard class: 3 |
| Packing group: II | Environmental hazards: No data available. | Special precautions for user: No data available. |

Section 15: Regulatory Information (non-mandatory)

Safety , Health and Environmental regulations / legislation specific for the substance or mixture

EU regulations

Major Accident Hazard: SEVESO III

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:-

Carcinogens: category 1A

National legislation: Storage class 3

Further information: Restricted to professional users. Shall not be placed on the market, or used, as a substance or in mixtures. Not permitted in toys or part of toys.

Chemical safety assessment: For this product a chemical safety assessment was not carried out.

Section 16: Other information

Further information:

Full text of H-Statements referred to under sections 2 and 3.

H225 Highly flammable liquid and vapour.



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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.
H412 Harmful to aquatic life with long lasting effects.

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Editors: HS&E Manager.

Reference:

according to Regulation (EC) No. 1907/2006

DISCLAIMER OF LIABILITY

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.