

MATERIAL SAFETY DATA SHEET

BENZENE

1. CHEMICAL IDENTITY

Chemical Name	BENZENE		Chemical Classification	Aromatic Hydrocarbon	
Synonyms	Benzol, Carbon-oil, Phenyl Hydride, Coal naphtha Cyclohexatriene			Trade Name	Benzene
Formula	C ₆ H ₆	C.A.S. NO.	71-43-2	UN NO.	1114
Regulated Identification	Shipping Name	Benzene			
	Codes/Label	3Flammable Liquid, Class 3			
	Hazardous waste I.D. No.	5			
	Hazchem Code	3 WE			
HAZARDOUS INGREDIENTS	C.A.S. NO.		HAZARDOUS INGREDIENTS	C.A.S. NO.	
1. Benzene	71-43-2				

2. PHYSICAL AND CHEMICAL DATA

Boiling Point/ Range °C	80.09	Physical State	Liquid	Appearance	Colourless
Melting/ Freezing Point °C	5.51	Vapour pressure @ 35 °C, mm Hg	100 mm Hg at 26.1 °C	Odour	Aromatic Odour
Vapour Density (Air = 1)	2.77	Solubility in water @ 30 °C	800 mg/ 1 at 25 °C	Solubility in others	Miscible with alcohol, chloroform, ether, Carbon Disulphide, acetone, Carbon tetrachloride
Specific Gravity (Water = 1)	0.879 @20 °C (Liquid)	pH	Neutral		

3. FIRE AND EXPLOSION HAZARD DATA

Flammability	Yes	LEL (%V)		Flash Point (OC) °C	NA
TDG Flammability	3	UEL (%V)	1.4% 8%	Flash Point, (CC) °C	-11.1
Auto ignition Temperature °C	562.2				
Explosion Sensitivity to Impact	Stable				
Explosion Sensitivity to Static Electricity	Not available				
Hazardous Combustion products	Toxic gases and apours				
Hazardous Polymerization	Does not occur				
Combustible Liquid	Yes	Explosive Material	No	Corrosive Material	No
Flammable Material	Yes	Oxidiser	No	Others	
Pyrophoric Material	No	Organic Peroxide	No		

4. REACTIVITY DATA

Chemical Stability	Stable
Incompatibility with other material	Strong Oxidisers, chlorine, bromine and iron
Reactivity	Reacts vigorously with
Hazardous Reaction Products	

5. HEALTH HAZARD DATA

Routes of Entry	Inhalation	Inhalation, Ingestion, skin and Eyes
Effects of Exposure/ Symptoms	Inhalation	Causes headache, dullness, dizziness, unconsciousness, and leukemia.
	Ingestion	Burnish sensation in mouth and stomach
	Contact	Skin : Gets absorbed, causes pain, redness. Repeated contact leads to dermatitis. Eyes : Causes pain, redness

Emergency Treatment				
Inhalation		Remove from exposure immediately. If breathing is irregular or stopped, start resuscitation, administer O ₂ , and seek immediately medical aid.		
Contact		Skin : If affected, remove soaked clothes and boots and wash thoroughly the affected area with plenty of water and soap. Eyes : Flush with plenty of water until irritation subsides.		
LD ₅₀ (Oral-Rat),	mg/kg	3400	LD ₅₀ ,	mg/kg
				1000 ppm as LC ₅₀ (Rat – 7 hrs.)
Permissible Exposure Limit	mg/kg ppm	30 mg/m ³ 10 (SHC)	Odor Threshold,	ppm mg/kg
				4.68 14.93 mg/m ³
TLV (ACGIH)	ppm mg/kg	10 32 mg/m ³	STEL,	ppm mg/kg
				25 75 mg/m ³
NFPA Hazard Signals	Health	Flammability	Reactivity/Stability	Special
	2	3	0	

6. PREVENTIVE MEASURES

Personal Protective Equipment	Avoid contact with liquid or vapour. Use hydrocarbon vapour canister, hydrocarbon, insoluble rubber or plastic gloves, goggles or face shield, hydrocarbon-insoluble apron such as neoprene shoes.
Handling and Storage Precautions	Store in a cool fireproof place with ventilation along the ground. Keep away from strong oxidising agents.

7. EMERGENCY AND FIRST AID MEASURES

FIRE	Fire Extinguishing Media	Foam, CO ₂ , and Dry Chemical Powder
	Special Procedure	Keep the containers cool by spraying water if exposed to fire.
	Unusual Hazards	Flash back along vapour trail may occur
EXPOSURE	First Aid Measures	Inhalation : Remove the victim to fresh air area, start resuscitation. Skin : Remove the wet clothes and wash the affected area with water and soap Eyes : Wash thoroughly for 15 min. with water. Ingestion : Do not induce vomiting, keep victim warm and quiet. Seek medical aid immediately.
	Antidotes/ Dosage	Not available

SPILLS	Steps to be taken Waste Disposal Method	Shut off leaks if without risk. Contain leaking liquid on sand or earth. Prevent liquid entering into sewer. Seal all waste in vapour tight plastic bags for eventual disposal. Spray into furnace. Incineration will become easier by mixing with more flammable material.
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8. ADDITIONAL INFORMATION/ REFERENCES

Suspected human carcinogen. Depending on the duration and the exposure, periodic medical check up is recommended. Prolonged exposure (even at low concentration) may cause leukemia. Use of alcoholic drink enhances the poisonous effect. Persin with blood disorder should avoid contact with benzene. High concentration can lead to unconsciousness or death. In industry, inhalation is the primary route of chronic benzene poisoning. Elimination chiefly through lungs. There is great individual variation in signs and symptoms of chronic benzene poisoning.

9. MANUFACTURER/ SUPPLIERS DATA

Name of firm :
Mailing Address :

10. DISCLAIMER

Information contained in this material safety data sheet is believed to be reliable but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them.