

Common Name: **BENZENE**

Synonyms: Benzin; Benzol; Phenyl Hydride

CAS No: 71-43-2

Molecular Formula: C₆H₆

RTK Substance No: 0197

Description: Clear, colorless liquid with a sweet *Petroleum*-like odor

HAZARD DATA

Hazard Rating	Firefighting	Reactivity
4 - Health 3 - Fire 0 - Reactivity DOT#: UN 1114 ERG Guide #: 130 Hazard Class: 3 (Flammable)	FLAMMABLE LIQUID Use dry chemical, CO ₂ , water spray or foam as extinguishing agents. Use water as fog, as spray may be ineffective and may scatter and spread fire. POISONOUS GASES ARE PRODUCED IN FIRE. CONTAINERS MAY EXPLODE IN FIRE. Use water spray to reduce vapors and keep containers cool. Vapors may travel to a source of ignition and flash back. Vapor is heavier than air and may travel a distance to cause a fire or explosion far from the source.	Benzene reacts violently or explosively with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE) and STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC). Benzene ignites on contact with CHROMIC ANHYDRIDE. Benzene is not compatible with LIQUID OXYGEN, HYDROGEN, and RANEY NICKEL.

SPILL/LEAKS

Isolation Distance:

Small Spill: 30 meters (100 feet)

Large Spill: 60 meters (200 feet)

Fire: 800 meters (1/2 mile)

Absorb liquids in vermiculite, dry sand, earth, or a similar material and deposit in sealed containers.

Keep **Benzene** out of confined spaces, such as sewers, because of the possibility of an explosion. DO NOT wash into sewer.

Benzene is very toxic to aquatic organisms.

PHYSICAL PROPERTIES

Odor Threshold:	12 ppm
Flash Point:	12°F (-11°C)
LEL:	1%
UEL:	8%
Auto Ignition Temp:	928° to 1,076°F (498° to 580°C)
Vapor Density:	2.7 (air = 1)
Vapor Pressure:	75 mm Hg at 68°F (20°C)
Specific Gravity:	0.88 (water = 1)
Water Solubility:	Slightly soluble
Boiling Point:	176°F (80°C)
Freezing Point:	42°F (6°C)
Ionization Potential:	9.24 eV
Molecular Weight:	78.1

EXPOSURE LIMITS

OSHA:	1 ppm, 8-hr TWA; 5 ppm, 15-min STEL
NIOSH:	0.1 ppm, 10-hr TWA; 1 ppm, 15-min STEL
ACGIH:	0.5 ppm, 8-hr TWA; 2.5 ppm, 15-min STEL
IDLH:	500 ppm
	ERPG-1: 50 ppm; ERPG-2: 150 ppm
	EPRG-3: 1,000 ppm

PROTECTIVE EQUIPMENT

Gloves:	Polyvinyl Alcohol, Silver Shield®/4H®, Viton and Fluoroelastomer (>8-hr breakthrough)
Coveralls:	Tychem® CPF 3, F, BR, LV, Responder®, and TK; Zytron® 300; and ONESuit® TEC (>8-hr breakthrough for <i>Hydrocarbons, Aromatic</i>)
Respirator:	>0.5 ppm - Supplied air or SCBA

HEALTH EFFECTS

Eyes:	Irritation
Skin:	Irritation
Inhalation:	Nose and throat irritation with coughing and wheezing Headache, dizziness, convulsions and coma
Chronic:	Cancer (leukemia) in humans

FIRST AID AND DECONTAMINATION

Remove	the person from exposure.
Flush	eyes with large amounts of water for at least 15 minutes. Remove contact lenses if worn.
Quickly	remove contaminated clothing and wash contaminated skin with large amounts of soap and water.
Begin	artificial respiration if breathing has stopped and CPR if necessary.
Transfer	promptly to a medical facility.