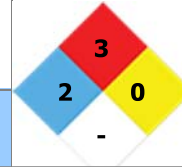




Safety Data Sheet



Code: 10040001
Ref: 16
Date: 15-11-2018
Page: 1/13

Benzene

1 Identification of the substance or mixture and of the supplier

1.1 GHS Product name or GHS product identifier

- 1.1.1 Common name Benzene
- 1.1.2 Chemical formula C₆H₆
- 1.1.3 Commercial name Benzeen, Benzin, Benzine, Benzol, Benzole, Benzolene, Benzolo, Phen
- 1.1.4 CAS number 71-43-2
- 1.1.5 Molecular weight 78.11 g/mole

1.2 Other product identifier

- 1.2.1 UN Number 1114
- 1.2.2 Annex I, EU directive 67/948/EC:
- 1.2.3 EC number

1.3 Recommendation for use and other prohibitions for use

1.4 Manufacturer or Supplier Detail

- 1.4.1 Manufacturer or Supplier : PTT Global Chemical Public Company Limited
- 1.4.2 Address : 4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Mueang Rayong, Rayong 21150 Thailand.
- 1.4.3 Telephone number : 66(0) 3899-4000 ext. 5755, 5799

1.5 Emergency telephone number : **66(0)38972222**

1.6 Other information

- 1.6.1 Hazardous substance No Yes

1.6.2 Hazardous category : Hazard type 3

1.6.3 Max quantity storage : ton

1.6.4 Uses

product

1.6.5 Other

2

Hazards identification

2.1. GHS classification of the substance/mixture and any national or regional information

2.1.1. Hazard classification according to the GHS

- Flammable liquids - Category 2
- Acute Toxicity: Skin - Category 4
- Skin Corrosion/Irritation - Hazard category 2 Irritant
- Serious Eye Damage/ Eye Irritation
- Germ Cell Mutagenicity - Hazard category 2
- Carcinogenicity - Hazard category 1 (Both 1A and 1B)
- Toxic To Reproduction - HazardCategory 2
- Specific Target Organ Toxicity (Single Exposure) - Category 3
- Aspiration Hazard - Hazard category 2

2.2 GHS label elements, including precautionary statements

2.2.1. Chemical name : Benzene

2.2.2. Product name or GHS product identifier :

2.2.3. Symbol and Hazard pictograms

2.2.4. Signal words : **Danger**

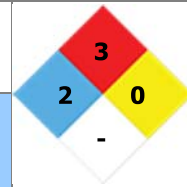
2.2.5. Hazard statement

- Highly flammable liquid and vapour
- Harmful in contact with skin
- Causes skin irritation
- Suspected of causing genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
- May cause cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
- Suspected of damaging fertility or the unborn child (state specific effect if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
- (respiratory tract irritation) May cause respiratory irritation or (Narcotic effects) May cause drowsiness or dizziness
- May be harmful if swallowed and enters airways



Safety Data Sheet

Benzene



Code: 10040001
Ref: 16
Date: 15-11-2018
Page: 3/13

2

Hazards identification (cont.)

2.2.6 Precautionary information

- Keep container closed when not in use
- Avoid contact with heat and ignition sources [and oxidizers] [- No Smoking]
- Store in a cool/low-temperature, well-ventilated [dry] place [away from heat and ignition sources]
- Use CO₂, dry chemical, or foam

2.2.7 Supplemental information

2.3 Other hazards which do not result in classification or are not covered by the GHS

2.3.1 Potential Chronic Health Effects

2.3.1.1 Carcinogen effects

Maybe-Carcinogen Carcinogen Non-Carcinogen N/A

2.3.1.2 Mutagenic effects

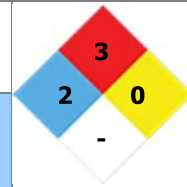
Mutagenic Non-Mutagenic N/A

2.3.1.3 Other

2.4 Environmental Hazards



Safety Data Sheet



Code: 10040001
Ref: 16
Date: 15-11-2018
Page: 4/13

Benzene

3 Composition / information on ingredients

3.1. Homogeneous substance Mixture substance

3.1.1. Chemical identity Benzene

3.1.2. Common-name Benzene

3.1.3 Synonym Benzene

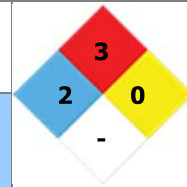
3.1.4 CAS number and other unique identifiers : 71-43-2

3.1.5 Impurities and stabilizing additives



Safety Data Sheet

Benzene



Code: 10040001
Ref: 16
Date: 15-11-2018
Page: 5/13

4

First-aid measures

4.1 First-aid

4.1.1 Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.

4.1.2 Skin contact

Removing contaminated clothing and shoes. Immediately wash skin with plenty of soap and water. Get medical attention if irritation persists.

4.1.3 Eyes contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

4.1.4 Ingestion

(Ingestion)

Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

4.2 Most important symptoms/effects

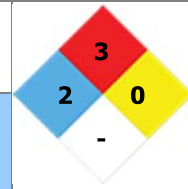
4.2.1 Immediate effects

4.2.2 Delayed effects

4.3 Indication of immediate medical attention

4.4 Special treatment needed, if necessary

4.5 Other



5

Fire fighting measures

5.1 Unsuitable extinguishing media : Do not use water jet.

5.2 Suitable extinguishing media : Use water spray, foam, dry chemical, carbon dioxide, sand.

5.3 Specific hazards arising from the chemical
NA

5.4 Special protective equipment and precautions for fire-fighters
NA

5.5 Precautions for fire fighters
NA

5.6 Other information
NA

6

Accidental release measures

6.1 Personal precautions
NA

6.2 Protective equipment



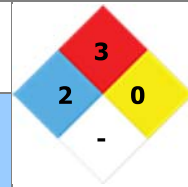
6.3 Emergency procedures

6.3.1 Massive leak
NA

6.3.2 Slight leak
NA

6.4 Environmental precautions
NA

6.5 Methods and materials for containment and cleaning up
NA



7

Handling and storage

7.1 Precautions for safe handling

- /

7.2 Incompatibility

7.2.1 Safe storage condition

7.2.2 Incompatible chemicals storage prohibitions

7.3 Storage area [GC4](#)

7.4 Incompatible chemicals condition

7.5 Hazard Class by UN :

7.6 Classification by law :

8

Exposure controls/personal protection

8.1 Occupational exposure limit values or biological limit values

Name	TLV-TWA	TLV-STEL	TLV-C	PEL	Thai	biological limit values
Benzene	0.5 ppm (ACGIH2010)	2.5 ppm (ACGIH2010)		1 ppm (OSHA 2006)	10 ppm (32 mg/m3)	

8.2 Appropriate engineering controls

Safety shower eye bath.

8.3 Personal protective equipment

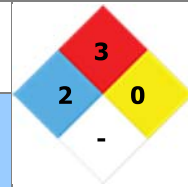


8.4 Personal hygiene

8.5 Other protection



Safety Data Sheet



Code: 10040001
 Ref: 16
 Date: 15-11-2018
 Page: 8/13

Benzene

9

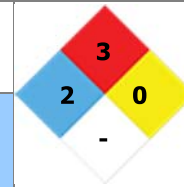
Physical and chemical properties

9.1 Appearance	Liquid Colorless liquid
9.2 Odour	
9.3 Odour threshold limit	4.68
9.4 PH-value	7 (N/A)
9.5 Melting point and Freezing point :	Melting point 5.5 °C Freezing point - °C
9.6 Initial boiling point/Boiling range :	Boiling point 80 °C Boiling range - °C -- °C
9.7 Flash point	-11 °C (close cup)
9.8 Evaporation rate	5.1 g/mol mg/sec
9.9 Flammability (solid, gas)	Burning time- sec and/or Burning Rate- mm/sec
9.10 Upper/Lower flammability or explosive limits	1.2 %LEL and/or 7.8 %UEL
9.11 Vapour pressure	9.94 kPa at 20 °C
9.12 Vapour density	Respect to air 2.77 g/l kpa
9.13 Relative density	(water= g/cm ³ or kg/m ³ at °C
9.14 Solubility(ies)	1.8 g/l water (20 °C)
9.15 Partition coefficient : n-octanol/water :	-
9.16 Auto-ignition temperature	562 °C
9.17 Decomposition temperature	- °C
9.18 Viscosity	0.740 mm ² /s at 25 oC
9.19 Heat of Combustion	- °C
9.20 The ignition distance test	- cm
9.21 The enclosed space ignition test	- s/m ³
9.22 The foam test	Respect to air - cm Flame duration - sec
9.23 Burn rate test	

Detail	Chemical		Unit
	Non-metal powder	Metal powder	
Wetted zone stops the fire	-	-	min
Burning time	-	-	sec
Burning rate	-	-	mm/s



Safety Data Sheet



Code: 10040001
Ref: 16
Date: 15-11-2018
Page: 9/13

Benzene

10

Stability and reactivity

- 10.1 Reactivity : Benzene vapors chlorine and light causes explosion. Reacts explosively with bromine pentafluoride, chlorine, chlorine trifluoride, diborane, nitric acid, nitryl perchlorate, liquid oxygen, oz
- 10.2 Chemical Stability : Stability Instability and emit gas N/A
- 10.3 Possibility of Hazardous reaction :
- 10.4 Conditions to avoid : Heat, ignition sources, incompatibles.
- 10.5 Incompatible materials :
- 10.6 Hazardous decomposition products : Other Toxic Effects on Humans:
Very hazardous in case of inhalation. Hazardous in case of skin cont
- 10.7 Corrosivity : Not available.

11

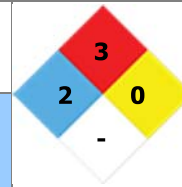
Toxicological information

- 11.1 Route of entry Inhalation Ingestion Skin contact Eyes contact
- 11.2 Symptoms related to the physical, chemical and toxicological characteristics
- 11.2.1 Symptom related with physical characteristic
- 11.2.2 Symptom related with chemical characteristic
- 11.2.3 Symptom related with toxicology :
- 11.3 Contact delayed, immediate and chronic effects
CARCINOGENIC EFFECTS: Classified A1 (Confirmed for human.) by ACGIH, 1 (Proven for human.) by IARC. MUTAGENIC EFFECTS: Classified POSSIBLE for human. Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeas
- 11.4 Numerical measures of toxicity
- 11.4.1 Acute oral toxicity LD50 (oral, rat): 930 mg/kg
- 11.4.2 Acute dermal toxicity 9400 mg/kg Rabbit
- 11.4.3 Acute toxic of the vapour LC50 (inhalation, rat): 10000 ppm(V) /7 h



Safety Data Sheet

Benzene



Code: 10040001
Ref: 16
Date: 15-11-2018
Page: 10/13

12

Ecological information

12.1 Ecotoxicity (aquatic and terrestrial, where available)

12.1.1 Immediate fish toxic :

Fish toxicity: *C.auratus* LC50: 46 mg/l /24 h ,*auratus* LC50: 46 mg/l /24 h

Bacterial toxicity: *Ps.pudita* EC0: 92 mg/l

Daphnia toxicity: *Daphnia magna* LC50: 1130 mg/l

Algal toxicity: *Sc.quadricauda* EC0: >

12.1.2 Immediate crustaceans toxic :

12.1.3 Immediate algae toxic :

Algal toxicity: *Sc.quadricauda* EC0: > 1400 mg/l

12.2. Persistence and degradability : Substantially biodegradable

12.3. Bio-accumulative potential : log P(oct):: 2.13

12.4. Mobility in soil :

12.5. Other adverse effects :

13

Disposal considerations

13.1 Waste information : waste control in laws

13.2 Remain materials :

13.3 Waste disposal : Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly fl

13.4 Package contaminated disposal : Handle contaminated packaging in the same way as the substance itself. If not officially specified differently, non-contaminated packaging

14

Transport information

- 14.1 UN Number 1114
14.2 UN Proper Shipping Name : BENZENE
14.3 Transport Class/Division : 3.0
14.4 Package group (if any) : II
14.5 Marine pollution : Yes No N/A
14.6 Special precautionary for user :
14.7 DGF(Transport in bulk) : IBC02
14.8 Classification code :
14.9 Other details

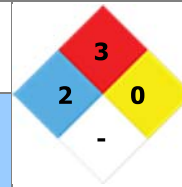
Pictogram





Safety Data Sheet

Benzene



Code: 10040001
 Ref: 16
 Date: 15-11-2018
 Page: 11/13

15 Regulatory information

15.1 Safety, health and environmental regulations

16 Other information

16.1 Date of latest issue

15-11-2018

16.2 Description of point of Safety Data Sheet changing

16.3 Abbreviation explanation

NFPA Hazard Code	HMIS Hazard	Rating System
	2 Health 3 Flammability 0 Reactivity	0 = No hazard (No hazard) 1 = Slight hazard (Slight hazard) 2 = Moderate hazard (Moderate hazard) 3 = Serious hazard (Serious hazard) 4 = Severe hazard (Severe hazard)

16.5 Information Safety Data Sheet files :

master file (Master file)

reference file (Reference file)

16.6 Local regulations :

16.7 Reference

16.8 Other details

Benzene

NFPA Rating and GHS Pictogram



UN Number : **1114** CAS Number : **71-43-2**

Flash point : **-11 °C** Auto-ignition **562 °C**

TWA-TLV:

Hazard statement

- **Highly flammable liquid and vapour, - Harmful in contact with skin - Causes skin irritation - Cause cancer (White Blood Cell) - May be harmful if swallowed and enters airways**

Emergency call
66(0)38972222

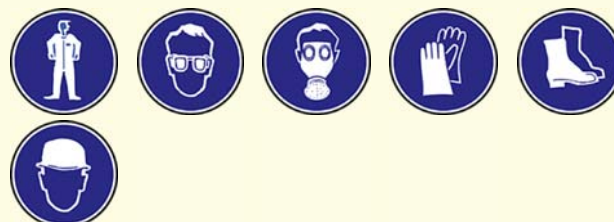
Health hazard



Highly flammable liquid and vapour
Harmful in contact with skin
Causes skin irritation
Suspected of causing genetic defects

Personal protection equipment

Respirators must be used where appropriate



First aids



- Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Removing contaminated clothing and shoes. Immediately wash skin with plenty of soap and water Get medical attention if irritation persists.
- Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- Rinse mouth .Do NOT induce vomiting. poison center

Fire extinguishing media



Use water spray, foam, dry chemical, carbon dioxide, sand.

Store and transportation



Avoid breathing vapor , mist. Ground/bond container and receiving equipment. Use explosion-proof lighting, ventilating, electrical equipment. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.

Leakage handling



- Evacuate unnecessary personnel. Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Wear proper protective equipment and work from upwind of spills/accidental release.
- Collect spillage. Store away from other materials.

For more information please contact : 038-972222

Code No. 10040001 Number of Revision 16

Warning :

Benzene

UN No : 1114

CAS No : 71-43-2



Signal words : Danger

Hazard statement

- Highly flammable liquid and vapour,
- Harmful in contact with skin
- Causes skin irritation
- Cause cancer (White Blood Cell)
- May be harmful if swallowed and enters airways

Precautionary Statement

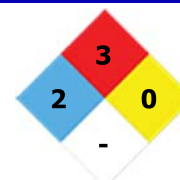
- Keep container closed when not in use
- Avoid contact with heat and ignition sources [and oxidizers] [- No Smoking]
- Store in a cool/low-temperature, well-ventilated [dry] place [away from heat and ignition sources]
- Use CO2, dry chemical, or foam

Manufacturer / Supplier

Company: PTT Global Chemical Public Company Limited

Address: 4, I-2 Road, Map Ta Phut Industrial Estate, Map Ta Phut, Mueang Rayong, Rayong 21150 Thailand.

Telephone number: 66(0) 3899-4000 ext. 5755, 5799



First aids :

- Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Removing contaminated clothing and shoes. Immediately wash skin with plenty of soap and water Get medical attention if irritation persists.
- Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- Rinse mouth .Do NOT induce vomiting. poison center

Emergency number :

66(0)38972222

Protective equipment:

