



Preparing for the New Era of Laboratories

# MATERIAL SAFETY DATA SHEET (MSDS)

According to regulation (EU) no.1907/2006

## **BENZENE 99% Extrapure**

PRODUCT CODE : B-3015

CAS No : 71-43-2

FORMULA :  $C_6H_6$

UN No : 1114

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## BENZENE 99% Extrapure



MSDS Number : 0066

Date : Aug 19<sup>th</sup>, 2024

Version : 1.0

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

- 1.1 Product Name** : BENZENE 99% Extrapure  
**Synonyms** : Benzol; Cyclohexatriene; Phenyl hydride  
**CAS No.** : 71-43-2  
**HS Code** : 2902 20 00  
**Chemical Formula** : C<sub>6</sub>H<sub>6</sub>  
**Molecular Weight** : 78.11 g/mol  
**Product Code** : B-3015  
**Brand** : Labotiq  
**1.2 Manufacturer** : Labotiq  
**Address** : Jl.Terapi Raya AD2-Bumi Menteng Asri Bogor, Jawa Barat Indonesia – 16111  
**Website** : [www.labotiq.net](http://www.labotiq.net)  
**Email** : [labotiq.id@gmail.com](mailto:labotiq.id@gmail.com)  
**For information** : Phone : (+62-251) 839110, 8311662, Fax : (+62-251) 83135710  
**Emergency number** : +6281316894650  
**1.3 Application** : Laboratory chemicals, Manufacture of substances, General Chemical reagent

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification according to Regulation (EC) No 1272/2008

Chronic aquatic toxicity (Category 3), Flammable liquids (Category 2), H225  
 Skin irritation (Category 2), H315  
 Eye irritation (Category 2), H319  
 Germ cell mutagenicity (Category 1B), H340  
 Carcinogenicity (Category 1A), H350  
 Specific target organ toxicity - repeated exposure (Category 1), H372  
 Aspiration hazard (Category 1), H304  
 H412

For the full text of the H-Statements mentioned in this Section, see Section 16

#### 2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Danger

Hazard statement(s)

H225

Highly flammable liquid and vapour.

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.

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H372	Causes damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.
Precautionary statement(s)	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273	Avoid release to the environment.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P331	Do NOT induce vomiting.
Supplemental Hazard Statements	none

### 2.3 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

### 3.1 Substances

Synonyms	: Benzol; Cyclohexatriene; Phenyl hydride
Formula	: C <sub>6</sub> H <sub>6</sub>
Molecular weight	: 78.11 g/mol
CAS-No.	: 71-43-2
EC-No.	: 200-753-7
Index-No.	: 601-020-00-8

### 3.2 Mixture

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
Benzene CAS-No. 71-43-2 EC-No. 200-753-7 Index-No. 601-020-00-8	Flam. Liq. 2; Skin Irrit. 2; Eye Irrit. 2; Muta. 1B; Carc. 1A; STOT RE 1; Asp. Tox. 1; Aquatic Chronic 3; H225, H315, H319, H340, H350, H372, H304, H412	<=100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

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**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Flush eyes with water as a precaution.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing**

media Carbon dioxide (CO<sub>2</sub>) Foam Dry powder

**Unsuitable extinguishing**

media For this substance/mixture no limitations of extinguishing agents are given.

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides Flash back possible over considerable distance., Container explosion may occur under fire conditions. Combustible. Pay attention to flashback. Vapors are heavier than air and may spread along floors. Development of hazardous combustion gases or vapours possible in the event of fire. Forms explosive mixtures with air at ambient temperatures.

**5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**5.4 Further information**

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

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### **6.2 Environmental precautions**

Do not let product enter drains. Risk of explosion.

### **6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

### **6.4 Reference to other sections**

For disposal see section 13.

## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge. Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

### **7.2 Conditions for safe storage, including any incompatibilities**

Storage conditions

Keep container tightly closed in a dry and well-ventilated place.

Keep away from heat and sources of ignition.

Keep locked up or in an area accessible only to qualified or authorized persons.

Storage class

Storage class (TRGS 510): 3: Flammable liquids

### **7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

### **8.2 Exposure control**

#### **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**

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).

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### 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

Material: Fluorinated rubber  
Minimum layer thickness: 0,7 mm  
Break through time: 480 min  
Material tested: Vitoject®

### Splash contact

Material: Fluorinated rubber  
Minimum layer thickness: 0,7 mm  
Break through time: 480 min  
Material tested: Vitoject®

### Body Protection

Flame retardant antistatic protective clothing.

### Respiratory protection

Recommended Filter type: Filter A-(P3) The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

### Control of environmental exposure

Do not let product enter drains. Risk of explosion.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance	Form: liquid, clear
	Colour: colourless
Odour	No data available
Odour Threshold	No data available
pH	No data available
Melting point/freezingpoint	Melting point/range: 5.5 °C - lit.
Initial boiling point and boiling range	80 °C - lit
Flash point	-11.0 °C - closed cup
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or	Upper explosion limit: 8 %(V)
	Lower explosion limit: 1.4 %(V)
explosive limits	No data available
Vapour pressure	100 hPa at 20 °C
Vapour density	No data available
Relative density	0,874 g/cm <sup>3</sup> at 25 °C - lit.
Water solubility	ca.1,88 g/l at 23,5 °C – soluble

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Partition coefficient: noctanol/water	log Pow: 2.13 at 25 °C
Auto-ignition temperature	498 °C at 1.013,5 hPa
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: 0,604 mm <sup>2</sup> /s at 25 °C
	Viscosity, dynamic: No data available
Explosive properties	No data available
Oxidizing properties	No data available

### 9.2 Other safety information

No data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Vapors may form explosive mixture with air.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Exothermic reaction with:

halogens

Halogenated hydrocarbon

in the presence of: Light metals

Risk of explosion with:

halogen-halogen compounds

Nitric acid

Boranes

Ozone

peroxi compounds

perchlorates

permanganic acid

perchloryl fluoride

Strong oxidizing agents

Chlorine

fluorides

uranium hexafluoride

Oxygen liquid

Risk of ignition or formation of inflammable gases or vapours with:

chromium(VI) oxide

Fluorine

nitryl compounds

Oxygen oxyhalogenic compounds

Violent reactions possible with:

mineral acids

sulfur

### 10.4 Conditions to avoid

Warming.

### 10.5 Incompatible materials

rubber, various plastics

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**10.6 Hazardous decomposition products**

In the event of fire: see section 5

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity**

LD50 Oral - Rat - male - &gt; 2.000 mg/kg (OECD Test Guideline 401)

Symptoms: Nausea

LC50 Inhalation - Rat - female - 4 h - 43,7 mg/l (OECD Test Guideline 403)

LD50 Dermal - Rabbit - male and female - &gt; 8.260 mg/kg (OECD Test Guideline 402)

**Skin corrosion/irritation**

Skin - Rabbit

Result: Irritating to skin. - 4 h (OECD Test Guideline 404)

Drying-out effect resulting in rough and chapped skin.

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Eye irritation Remarks: (ECHA)

**Respiratory or skin sensitisation**

Maximization Test - Guinea pig

Result: negative (OECD Test Guideline 406)

**Germ cell mutagenicity**

May cause genetic defects.

Test Type: Ames test Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster lung cells

Metabolic activation: with and without metabolic activation

Method: US-EPA

Result: positive Test Type: In vitro mammalian cell gene mutation test

Metabolic activation: with and without metabolic activation

Method: US-EPA

Result: positive

Test Type: Mutagenicity (mammal cell test): micronucleus.

Species: Mouse Cell type: Bone marrow Application

Route: inhalation (vapor)

Method: OECD Test Guideline 474

Result: positive

**Carcinogenicity**This is or contains a component that has been reported to be carcinogenic classification.  
(Benzene) Human carcinogen.(Benzene)

IARC: 1 - Group 1: Carcinogenic to humans (Benzene)

**Reproductive toxicity**

No data available(Benzene)



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**Specific target organ toxicity - single exposure**

Causes damage to organs through prolonged or repeated exposure. - Blood

**Specific target organ toxicity - repeated exposure**

No data available(Benzene).

**Aspiration hazard**

May be fatal if swallowed and enters airways.

**Additional Information**

Repeated dose toxicity - Rat - male and female - Oral - No observed adverse effect level - 100 mg/kg(Benzene)

RTECS: CY1400000

Nausea, Dizziness, Headache, narcosis, Inhalation of high concentrations of benzene may have an initial stimulatory exhilaration, nervous excitation and/or giddiness, depression, drowsiness chest, breathlessness, and loss of consciousness. Tremors, convulsions, a collapse can occur in a few minutes to several hours following severe exposure causes pulmonary edema and hemorrhage of pulmonary tissue. Direct skin contact may result in drying, scaling dermatitis, or development of second hematopoietic system. Bleeding from the nose, gums, or mucous membranes a leukopenia, thrombocytopenia, aplastic anemia

**SECTION 12: Ecological information****12.1 Toxicity**

Toxicity to fish

flow-through test LC50 - Oncorhynchus mykiss (rainbow trout) - 5,3 mg/l - 96 h  
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates

static test EC50 - Daphnia magna (Water flea) - 10 mg/l - 48 h  
(OECD Test Guideline 202)

Toxicity to algae

static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 100 mg/l - 72 h  
(OECD Test Guideline 201)

Toxicity to bacteria

static test IC50 - - 13 mg/l - 24 h Remarks: (ECHA)

**12.2 Persistence and degradability**Biodegradability aerobic - Exposure time 28 d Result: 96 % - Readily biodegradable.  
(OECD Test Guideline 301F)**12.3 Bioaccumulative potential**Bioaccumulation Leuciscus idus (Golden orfe) - 3 d - 0,05 mg/l(benzene)  
Bioconcentration factor (BCF): 10**12.4 Mobility in soil**

No data available

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### 12.5 Results of PBT and vPvB assessment

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.

### 12.6 Other adverse effects

Endangers drinking-water supplies if allowed to enter soil or water. Discharge into the environment must be avoided.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

#### Contaminated packaging

Dispose of as unused product.

## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 1114

IMDG: 1114

IATA: 1114

### 14.2 UN proper shipping name

ADR/RID: BENZENE

IMDG: BENZENE

IATA: BENZENE

### 14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

### 14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

### 14.6 Special precautions for user

#### Further information

No data available

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

### 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

## SECTION 16: Other information

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

H225 Highly flammable liquid and vapor.

H304 May be fatal if swallowed and enters airways.

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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..

### **National Fire Protection Association (U.S.A.):**

Health: 2

Flammability: 3

Reactivity: 0

### **Further information**

*The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Labotiq shall not be held liable for any damage resulting from handling or from contact with the above product.*

Version : 1.0

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