

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Revision date: 27.10.2015

14440-49 Benzene

Product code: 1444049

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

14440-49 Benzene

CAS No: 71-43-2
Index No: 601-020-00-8
EC No: 200-753-7

1.2. Relevant identified uses of the substance or mixture and uses advised against**Use of the substance/mixture**

Water analysis

1.3. Details of the supplier of the safety data sheet

Company name: HACH LANGE GmbH
Street: Willstätterstr. 11
Place: D-40549 Düsseldorf
Telephone: +49 (0)211 5288-383
e-mail: SDS@hach.com
Internet: www.de.hach.com
Responsible Department: HACH LANGE Ltd.
5, Pacific Way
Salford Manchester M50 1DL - United Kingdom
Tel. +44 (0) 161 872 1487 * Fax +44 (0) 161 848 7324
e-Mail: info-uk@hach.com

HACH LANGE Ltd.
Unit 1, Chestnut Road Western Industrial Estate
IRL-Dublin 12
Tel. +353 (0)1 4602522
e-Mail: info-ie@hach.com

1.4. Emergency telephone number:

Poison Control Center Mainz: Tel: +49 (0) 6131 19240 - 24 hour emergency service -

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

Hazard categories:
Flammable liquid: Flam. Liq. 2
Carcinogenicity: Carc. 1A
Germ cell mutagenicity: Muta. 1B
Skin corrosion/irritation: Skin Irrit. 2
Serious eye damage/eye irritation: Eye Irrit. 2
Specific target organ toxicity - repeated exposure: STOT RE 1
Aspiration hazard: Asp. Tox. 1
Hazard Statements:
Highly flammable liquid and vapour.
May cause cancer.
May cause genetic defects.
Causes skin irritation.
Causes serious eye irritation.
Causes damage to organs through prolonged or repeated exposure.
May be fatal if swallowed and enters airways.

2.2. Label elements

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Regulation (EC) No. 1272/2008

Hazard components for labelling

benzene

Signal word: Danger

Pictograms:



Hazard statements

H225 Highly flammable liquid and vapour.
 H304 May be fatal if swallowed and enters airways.
 H319 Causes serious eye irritation.
 H315 Causes skin 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.

Precautionary statements

P201 Obtain special instructions before use.
 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.
 P308+P313 IF exposed or concerned: Get medical advice/attention.
 P331 Do NOT induce vomiting.

Special labelling of certain mixtures

Restricted to professional users.

Additional advice on labelling

The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008.

SECTION 3: Composition/information on ingredients

3.1. Substances

Hazardous components

CAS No	Chemical name	Quantity
	EC No	Index No
	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
71-43-2	benzene	100 %
	200-753-7	601-020-00-8
	Flam. Liq. 2, Carc. 1A, Muta. 1B, Skin Irrit. 2, Eye Irrit. 2, STOT RE 1, Asp. Tox. 1; H225 H350 H340 H315 H319 H372 H304	

Full text of H and EUH statements: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

First aider needs to protect himself.

After inhalation

Move to fresh air.

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If victim has stopped breathing: Oxygen or artificial respiration if needed. Call a physician immediately. Show this safety data sheet to the doctor in attendance.

After contact with skin

Take off all contaminated clothing immediately. Wash off immediately with plenty of water for at least 15 minutes. Take victim immediately to hospital. Show this safety data sheet to the doctor in attendance.

After contact with eyes

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Show this safety data sheet to the doctor in attendance.

After ingestion

Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Consult a physician. Show this safety data sheet to the doctor in attendance.

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

irritant effects, Nausea, Dizziness, narcosis
Causes headache, drowsiness or other effects to the central nervous system.
May cause respiratory arrest.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂), Foam, Dry powder

Unsuitable extinguishing media

Water

5.2. Special hazards arising from the substance or mixture

Combustible Liquid
Fire may liberate hazardous vapours.: Carbon monoxide, Carbon dioxide (CO₂)
Vapours are heavier than air and may spread along floors.
Pay attention to flashback.
Vapours may form explosive mixture with air.

5.3. Advice for firefighters

In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.
In the event of fire, wear self-contained breathing apparatus.
Suppress (knock down) gases/vapours/mists with a water spray jet.

Additional information

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

Use personal protective equipment. Only qualified personnel equipped with suitable protective equipment may intervene. Immediately evacuate personnel to safe areas.
Do not breathe vapours, mist or gas. 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.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Explosive properties!

6.3. Methods and material for containment and cleaning up

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local/national regulations (see section 13).
Soak up with inert absorbent material.

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Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

13. Disposal considerations

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Container may be opened only under exhaust ventilation hood.

Advice on protection against fire and explosion

Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).
Keep away from heat and sources of ignition.

Further information on handling

Observe label precautions.
Avoid contact with skin, eyes and clothing.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Storage temperature: 15-25 °C
Keep container tightly closed in a dry and well-ventilated place. The product should only be used in areas from which all naked lights and other sources of ignition have been excluded.

7.3. Specific end use(s)

Laboratory chemicals
Reagent for analysis

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
71-43-2	Benzene	1	3.25		TWA (8 h)	WEL

8.2. Exposure controls

Appropriate engineering controls

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Protective and hygiene measures

Wash hands before breaks and after work.
General industrial hygiene practice.
Ensure that eye flushing systems and safety showers are located close to the working place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Eye/face protection

Safety glasses with side-shields

Hand protection

Use barrier skin cream.

In case of full contact:
Glove material : Viton (R)
Layer thickness: > 0,7 mm

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Break through time: 480 min

In case of contact through splashing:

Glove material : Nitrile rubber

Layer thickness: > 0,4 mm

Break through time: >10 min

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

Skin protection

Remove and wash contaminated clothing before re-use.

Respiratory protection

Breathing apparatus only if aerosol or dust is formed. respirator with A filter

Environmental exposure controls

Do not flush into surface water or sanitary sewer system.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	liquid
Colour:	colourless
Odour:	characteristic
pH-Value:	not applicable

Changes in the physical state

Melting point:	5,5 °C
Initial boiling point and boiling range:	80,1 °C
Sublimation point:	no data available
Softening point:	no data available
Pour point:	no data available
:	no data available
Flash point:	-11 °C

Flammability

Solid:	no data available
Gas:	no data available

Explosive properties

no data available

Lower explosion limits:	1,4 vol. %
Upper explosion limits:	8,0 vol. %
Ignition temperature:	555 °C

Auto-ignition temperature

Solid:	no data available
Gas:	no data available

Decomposition temperature: no data available

Oxidizing properties

no data available

Vapour pressure: (at 20 °C)	101 hPa
Vapour pressure:	no data available

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Density (at 20 °C):	0,88 g/cm ³
Bulk density:	no data available
Water solubility: (at 20 °C)	1,770 g/L
Solubility in other solvents	
no data available	
Partition coefficient:	log Pow 2,13
Viscosity / dynamic:	no data available
Viscosity / kinematic: (at 20 °C)	0,78 mm ² /s
Flow time:	no data available
Vapour density:	no data available
Evaporation rate:	no data available
Solvent separation test:	no data available
Solvent content:	no data available

9.2. Other information

Solid content:	no data available
no data available	

SECTION 10: Stability and reactivity**10.1. Reactivity**

Vapours may form explosive mixture with air.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Exothermic reaction: Halogenated compounds, Halogenated hydrocarbons, Light metals
Combustion/explosion hazards: Nitric acid, Ozone, Peroxides
Reacts with the following substances: Oxidizing agents, Nitric acid

10.4. Conditions to avoid

Heat, flames and sparks.
To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials

Rubber products Plastic material, including expanded plastics material

10.6. Hazardous decomposition products

Stable under recommended storage conditions.

Further information

In use, may form flammable/explosive vapour-air mixture.

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

LC50/inhalation/4h/rat = 44 mg/l/4h
LD50/oral/rat = 930 mg/kg
LD50/dermal/rabbit = >8260 mg/kg
ALD/oral/Human experience = 50 mg/kg.

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
71-43-2	benzene				
	dermal	LD50 mg/kg	8260	Rabbit	GESTIS

Irritation and corrosivity

Contact with eyes or skin causes irritation.

Carcinogenic/mutagenic/toxic effects for reproduction

Known carcinogen. Mutagen

STOT-single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure

Specific target organ toxicity - repeated exposure

Aspiration hazard

Aspiration may cause pulmonary oedema and pneumonitis.

Specific effects in experiment on an animal

Causes severe irritation to eyes in animal experiments./Skin irritation

Further information

Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

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

Do not flush into surface water or sanitary sewer system.

12.2. Persistence and degradability

Readily biodegradable.

Chemical Oxygen Demand (COD) 3100 mg/g

12.3. Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 2,13

Bioaccumulation is unlikely.

12.4. Mobility in soil

Distribution among environmental compartments

log Koc: 1,79

Mobile in soils

12.5. Results of PBT and vPvB assessment

no data available

12.6. Other adverse effects

Henry's Constant

562 Pa*m³/mol (25°C)**Further information**

Discharge into the environment must be avoided.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Advice on disposal**

In accordance with local and national regulations.

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Waste disposal number of waste from residues/unused products

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

Waste disposal number of used product

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

Contaminated packaging

Dispose of as unused product.

The hazard and precautionary statements displayed on the label also apply to any residues left in the container.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 1114
14.2. UN proper shipping name: BENZENE
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Hazard label: 3



Classification code: F1
Limited quantity: 1 L
Transport category: 2
Hazard No: 33
Tunnel restriction code: D/E

Other applicable information (land transport)

Excepted Quantities: E2

Inland waterways transport (ADN)

Other applicable information (inland waterways transport)

Not tested

Marine transport (IMDG)

14.1. UN number: UN 1114
14.2. UN proper shipping name: BENZENE
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Hazard label: 3



Special Provisions: -
Limited quantity: 1 L
EmS: F-E, S-D

Other applicable information (marine transport)

Excepted Quantities: E2

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 1114

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14.2. UN proper shipping name: BENZENE
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Hazard label: 3



Limited quantity Passenger: 1 L
IATA-packing instructions - Passenger: 353
IATA-max. quantity - Passenger: 5 L
IATA-packing instructions - Cargo: 364
IATA-max. quantity - Cargo: 60 L

Other applicable information (air transport)

Excepted Quantities: E2
Passenger-LQ: Y341

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

no data available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not relevant

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):
Entry 28: benzene

National regulatory information

Water contaminating class (D): 3 - highly water contaminating

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information**Changes**

Revision: 27.10.2015

Safety datasheet sections which have been updated: 2, 4

Revision: 25.11.2014

Safety datasheet sections which have been updated: 2.2

Revision: 18.12.2013

Safety datasheet sections which have been updated: 2-16

Relevant H and EUH statements (number and full text)

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.
H372 Causes damage to organs through prolonged or repeated exposure.



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H412

Harmful to aquatic life with long lasting effects.