

Revision: 07.07.2025

Benzene a.r.

Product code: AC11.00299

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

Benzene a.r.

REACH Registration Number: 01-2119447106-44-XXXX
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**

Reagents and laboratory chemicals
Only for laboratory and analysis purposes.

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet**Details of the supplier of the safety data sheet**

Company name: AnalytiChem Services, Unipessoal, Lda
Street: Rua de Júlio Dinis 676 7º
Place: N-4050-320 Porto
Telephone: +351 226002917
E-mail: info@analyticchem.com
Contact person: SDS service department
E-mail: SDS@analyticchem.com
Internet: www.analyticchem.com
Responsible Department: SDS service department

Supplier or manufacturer details

Company name: AnalytiChem Belgium NV
Street: Industriezone "De Arend" 2
Place: B-8210 Zedelgem
Telephone: +32 50 28 83 20
E-mail: info.be@analyticchem.com
Contact person: SDS service department
E-mail: SDS@analyticchem.com
Responsible Department: AnalytiChem
EU-Belgium: AnalytiChem Belgium, Industriezone "De Arend" 2, 8210 Zedelgem, Belgium, +32 50 28 83 20
EU-Germany: AnalytiChem Germany, Stempelstrasse 6, 47167 Duisburg, Germany, +49 203 51 94 – 200
EU-Netherlands: AnalytiChem Netherlands, Communicatieweg 7, 3641 SG Mijdrecht, The Netherlands, +31 297 286848
UK: AnalytiChem UK, Unit 7 Launton Business Center, Murdock Road, Bicester, OX26 4XB, England, +44 1869 355 500
USA: AnalytiChem USA, 227 China Road, Winslow, Maine, 04901, United States, +1 800-244-8378
Canada: AnalytiChem Canada, 21800 Clark Graham Avenue, Baie d'Urfe, H9X 4B6, Canada, +1 514-457-0701
Australia: ORE Research & Exploration Pty Ltd, 37A Hosie Street, Bayswater North, 3153, Australia, +61 3 9729 0333

1.4. Emergency telephone number:

+44 20 3807 3798 (CHEMTREC)

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Further Information

No data available

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

Flam. Liq. 2; H225
Carc. 1A; H350
Muta. 1B; H340
Skin Irrit. 2; H315
Eye Irrit. 2; H319
STOT RE 1; H372
Asp. Tox. 1; H304
Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

2.2. Label elements**Regulation (EC) No 1272/2008**

Signal word: Danger

Pictograms:

**Hazard statements**

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.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

P201	Obtain special instructions before use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
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

Restricted to professional users.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients**3.1. Substances**

Sum formula: C6H6

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Molecular weight: 78,11 g/mol

Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
71-43-2	benzene			100 %
	200-753-7	601-020-00-8	01-2119447106-44-	
	Flam. Liq. 2, Carc. 1A, Muta. 1B, Skin Irrit. 2, Eye Irrit. 2, STOT RE 1, Asp. Tox. 1, Aquatic Chronic 3; H225 H350 H340 H315 H319 H372 H304 H412			

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

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
71-43-2	200-753-7	benzene	100 %
	inhalation: LC50 = 13700 mg/l (vapours); oral: LD50 = > 2000 mg/kg		

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

Self-protection of the first aider

After inhalation

Provide fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Call a physician immediately.

After contact with skin

Wash immediately with: Water
Take off immediately all contaminated clothing and wash it before reuse.
Call a physician immediately.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.
Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Observe risk of aspiration if vomiting occurs.
Call a physician immediately.

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

Irritant
Respiratory complaints
Dizziness
Anaesthetic state
Inebriation
Agitation
Gastrointestinal complaints
Headache

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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**

Foam
Extinguishing powder
Carbon dioxide (CO2)

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible liquids
Hazardous combustion products
In case of fire may be liberated: Carbon dioxide (CO2) Carbon monoxide
Vapours are heavier than air, spread along floors and form explosive mixtures with air.
Heating causes rise in pressure with risk of bursting.
Beware of reignition.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.
In case of fire and/or explosion do not breathe fumes.
Avoid contact with skin, eyes and clothes.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Move undamaged containers from immediate hazard area if it can be done safely.
Use water spray jet to protect personnel and to cool endangered containers.

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

Keep away from sources of ignition - No smoking.
This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe).
Take action to prevent static discharges.

For non-emergency personnel

Provide adequate ventilation.
Use personal protection equipment.
Avoid contact with skin, eyes and clothes.
Remove persons to safety.
Emergency procedures
Consult an expert
Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.
The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

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Danger of explosion

6.3. Methods and material for containment and cleaning up**For containment**

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

Read label before use. Handle and open container with care.

When using do not eat, drink, smoke, sniff. Keep container tightly closed.

Use personal protection equipment. Use extractor hood (laboratory).

Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation.

Advice on protection against fire and explosion

Take action to prevent static discharges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs.

The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

Further information on handling

Take off immediately all contaminated clothing and wash it before reuse.

Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. If handled uncovered, arrangements with local exhaust ventilation have to be used.

Store in a place accessible by authorized persons only.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep in a cool, well-ventilated place. Keep container dry.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints on joint storage

Take national regulations into account.

Further information on storage conditions

Keep cool. Protect from sunlight.

storage temperature +5°C - +30°C

7.3. Specific end use(s)

Laboratory chemicals

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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

PNEC values

CAS No	Substance	Environmental compartment	Value
71-43-2	benzene		
		Freshwater	1,9 mg/l
		Freshwater (intermittent releases)	1,9 mg/l
		Marine water	1,9 mg/l
		Freshwater sediment	33 mg/kg
		Marine sediment	33 mg/kg
		Micro-organisms in sewage treatment plants (STP)	39 mg/l
		Soil	4,8 mg/kg

Additional advice on limit values

DIN EN 482

DIN EN 689

8.2. Exposure controls**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Individual protection measures, such as personal protective equipment**Eye/face protection**

goggles

Face protection umbrella

Hand protection

Suitable examples are gloves of KCL GmbH, D-36124 Eichenzell, e-mail: vertrieb@kcl.de with the following specification (test according to EN 374):

By long-term hand contact

Trade name/designation KCL 890 Vitoject®

Suitable material: FKM (fluoro rubber) 0,7 mm

Wearing time with permanent contact: > 480 min

By short-term hand contact

Trade name/designation KCL 890 Vitoject®

Suitable material: FKM (fluoro rubber) 0,7 mm

Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet supplied by us and for the designated use. When dissolving in or mixing with other substances and under

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conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Take off immediately all contaminated clothing and wash it before reuse.
Wear fire resistant or flame retardant clothing.
Wash hands and face before breaks and after work and take a shower if necessary.
Draw up and observe skin protection programme.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.
Filtering device with filter or ventilator filtering device of type: 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.

Environmental exposure controls

Do not allow to enter into surface water or drains.
Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches.
Danger of explosion

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

Physical state:	Liquid
Colour:	colourless
Odour:	characteristic
Odour threshold:	No data available
Melting point/freezing point:	5,5 °C
Boiling point or initial boiling point and boiling range:	80 °C
Flammability:	No data available
Lower explosion limits:	1,2 vol. %
Upper explosion limits:	7,8 vol. %
Flash point:	-11 °C
Auto-ignition temperature:	498 °C
Decomposition temperature:	No data available
pH-Value:	No data available
Viscosity / kinematic: (at 20 °C)	0,78 mm ² /s
Water solubility: (at 23,5 °C)	1,88 g/l
Solubility in other solvents	
No data available	
Dissolution rate:	No data available
Partition coefficient n-octanol/water:	No data available
Dispersion stability:	No data available
Vapour pressure: (at 20 °C)	100 hPa
Vapour pressure:	No data available
Density:	0,88 g/cm ³
Bulk density:	No data available
Relative vapour density:	No data available
Particle characteristics:	No data available

9.2. Other information

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Information with regard to physical hazard classes**Explosive properties**

Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Sustained combustibility:

No data available

Self-ignition temperature

Solid: No data available
Gas: No data available

Oxidizing properties

No data available

Other safety characteristics

Evaporation rate: No data available
Solvent separation test: No data available
Solvent content: 100%
Solid content: No data available
Sublimation point: No data available
Softening point: No data available
Pour point: No data available
Viscosity / dynamic: No data available
Flow time: No data available

Further Information

No data available

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

Vapours may form explosive mixtures with air.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Oxidising agent
halogenated hydrocarbons
Nitric acid
peroxides, for example hydrogen peroxide
Chlorine
Fluorine
Oxygen
sulphuric acid
Hydrochloric acid

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Heat

10.5. Incompatible materials

plastic and rubber

10.6. Hazardous decomposition products

SECTION 5: Firefighting measures

Further information

No data available

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SECTION 11: Toxicological information**11.1. Information on hazard classes****Toxicokinetics, metabolism and distribution**

No data available

Acute toxicity

Based on available data, the classification criteria are not met.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
71-43-2	benzene				
	oral	LD50 mg/kg	> 2000 Rat	Toxic. Appl. Pharmac. 19, 699-704 (1971)	OECD Guideline 401
	inhalation (4 h) vapour	LC50 mg/l	13700 Rat	Toxic. Appl. Pharmacol. 27, 183-193 (1971)	OECD Guideline 403

Irritation and corrosivity

Skin corrosion/irritation: Causes skin irritation.

Serious eye damage/eye irritation: Causes serious eye irritation.

Has degreasing effect on the skin.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

May cause cancer. (benzene)

May cause genetic defects. (benzene)

Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure. (benzene)

blood

Aspiration hazard

May be fatal if swallowed and enters airways.

Information on likely routes of exposure

No data available

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards**Endocrine disrupting properties**

No data available

Other information

Irritant

Respiratory complaints

Dizziness

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Anaesthetic state

Inebriation

Agitation

Gastrointestinal complaints

Headache

Further information

Avoid exposure - obtain special instructions before use.

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

Harmful to aquatic life with long lasting effects.

CAS No	Chemical name	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
71-43-2	benzene						
	Acute fish toxicity	LC50	5,3 mg/l	96 h	Oncorhynchus mykiss	Arch. Environm. Contam. Toxicol. 11,487-	OECD Guideline 203
	Acute algae toxicity	ErC50	32 mg/l	72 h	Pseudokirchneriella subcapitata	Study report (2001)	OECD Guideline 201
	Acute crustacea toxicity	EC50	377 mg/l	48 h	other aquatic crustacea:	REACH Registration Dossier	Method: other
	Fish toxicity	NOEC	3,1 mg/l	28 d	Morone saxatilis	US Nat. Mar. Fish Serv. Fish. Bull. 74,6	Juvenile striped bass were exposed to be
	Crustacea toxicity	NOEC	ca. 0,17 mg/l	20 d	other aquatic crustacea:	REACH Registration Dossier	Method: other

12.2. Persistence and degradability

96 %; 28 d; aerob

Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
71-43-2	benzene	2,13

BCF

CAS No	Chemical name	BCF	Species	Source
71-43-2	benzene	< 10	Leuciscus idus melanotus	Chemosphere 14 (10)

12.4. Mobility in soil

log Koc: 1,93

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of UK REACH.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

Do not allow to enter into surface water or drains.

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Avoid release to the environment.

Further information

No data available

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Send to a physico-chemical treatment facility under observation of official regulations.

Do not empty into drains.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information**Land transport (ADR/RID)**

14.1. UN number or ID 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
Excepted quantity:	E2
Transport category:	2
Hazard No:	33
Tunnel restriction code:	D/E

Inland waterways transport (ADN)

14.1. UN number or ID 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
Excepted quantity:	E2

Marine transport (IMDG)

14.1. UN number or ID 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
Excepted quantity:	E2
EmS:	F-E, S-D

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 1114
14.2. UN proper shipping name:	BENZENE

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14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3
Limited quantity Passenger:	1 L
Passenger LQ:	Y341
Excepted quantity:	E2
IATA-packing instructions - Passenger:	353
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	364
IATA-max. quantity - Cargo:	60 L

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 3, Entry 28, Entry 40, Entry 75

Information according to Directive 2012/18/EU (SEVESO III): P5c FLAMMABLE LIQUIDS

National regulatory information

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe employment restrictions for women of child-bearing age.

Water hazard class (D):

3 - highly hazardous to water

SECTION 16: Other information**Abbreviations and acronyms**

Flam. Liq. 2: Flammable liquids, hazard category 2

Asp. Tox. 1: Aspiration hazard, hazard category 1

Skin Irrit. 2: Skin irritation, hazard category 2

Eye Irrit. 2: Eye irritation, hazard category 2

Muta. 1B: Germ cell mutagenicity, hazard category 1B

Carc. 1A: Carcinogenicity, hazard category 1A

STOT RE 1: Specific target organ toxicity - repeated exposure, hazard category 1

Aquatic Chronic 3: Hazardous to the aquatic environment, long-term hazard category: Chronic 3

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.
H412	Harmful to aquatic life with long lasting effects.

Further Information

Provide appropriate information, instructions and training to users

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be

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transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.