

SAFETY DATA SHEET (SDS)

in accordance with Regulation (EC) No 1907/2006 (REACH), Annex II — Regulation (EU) 2020/878

Date: 16.07.2026 | Version: 1 | EN

Benzen

benzene

CAS 71-43-2

C₆H₆

EC 200-753-7



MOLAR MASS

78.11

LOGP

2.13

HAZARD CLASSIFICATION (GHS / CLP)



Danger

H225 H350 H340 H304 H372 H315 H319

1. Identification of the substance/mixture and of the company/undertaking

1.1 Substance name	Benzen
1.1 IUPAC name	benzene
1.1 CAS number	71-43-2
1.1 EC number	200-753-7
1.1 PubChem CID	241
1.1 InChIKey	UHOVQNZJYSORNB-UHFFFAOYSA-N
1.1 SMILES	C1=CC=CC=C1
1.1 Molecular formula	C ₆ H ₆ ^[7]
1.1 Molar mass	78.11 g/mol ^[7]
1.1 Exact mass	—

1.2 Uses

For laboratory and research purposes. Not for use in the production of food, medicines or cosmetics without appropriate authorisation.

1.3 Details of the supplier

Supplier details have not been configured (MOL-GOD → Label generator → Producer details).

1.4 Emergency telephone number

Emergency telephone +48 42 657 99 00

Toxicological Information Centre (CIT), Łódź — available 24/7

2. Hazards identification



Danger

Hazard statements (H) ^{[3][4][10]}

H225	Highly flammable liquid and vapour
H350	May cause cancer
H340	May cause genetic defects
H304	May be fatal if swallowed and enters airways
H372	Causes damage to organs through prolonged or repeated exposure
H315	Causes skin irritation
H319	Causes serious eye irritation

Precautionary statements (P) ^{[3][4][10]}

P201	Obtain special instructions before use
P203	Obtain, read and follow all safety instructions before use
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233	Keep container tightly closed
P240	Ground and bond container and receiving equipment
P260	Do not breathe dust/fume/gas/mist/vapours/spray
P264	Wash thoroughly after handling
P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/eye protection/face protection
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302+P352	IF ON SKIN: Wash with plenty of water
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing; Rinse skin with water or shower
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes; Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313	IF exposed or concerned: Get medical advice/attention
P314	Get medical advice/attention if you feel unwell
P331	Do NOT induce vomiting
P332+P313	If skin irritation occurs: Get medical advice/attention
P337+P313	If eye irritation persists: Get medical advice/attention
P370+P378	In case of fire: Use appropriate media to extinguish
P403+P235	Store in a well-ventilated place: Keep cool
P405	Store locked up

NOTE: CMR substance — employment of pregnant and breastfeeding women in work harmful to health is prohibited (Polish Labour Code Art. 176 § 1; Council of Ministers Regulation of 3 April 2017, Journal of Laws 2017 item 796). ^{[16][17]}

3. Composition/information on ingredients

Substance type	pure substance
CAS Number	71-43-2
EC number	200-753-7
Molecular formula	C ₆ H ₆
Concentration	>=99%

4. First aid measures



Inhalation

Move the affected person to fresh air. Keep at rest. If not breathing: artificial respiration (qualified personnel only). ^{[1][2][14]}

Skin contact

Remove contaminated clothing. Rinse skin with soap and water (min. 15 minutes). ^{[1][2][14]}

Eye contact

Rinse eyes with running water (min. 15 minutes). Remove contact lenses if possible. If irritation persists — consult an ophthalmologist. ^{[1][2][14]}

Ingestion

Do NOT induce vomiting (unless directed by a physician). Rinse mouth with water. Never give anything by mouth to an unconscious person. Poison Centre Łódź: +48 42 657 99 00 (24/7). Emergency number: 112. ^{[1][2][14]}

Symptoms and effects

skin redness and irritation; eye irritation and watering. ^{[3][10]}

Notes for physician

Symptomatic treatment. No specific antidote. ^{[1][2][14]}

Emergency numbers: CIT Łódź: +48 42 657 99 00 (24/7) | Emergency: 112

5. Firefighting measures

Suitable extinguishing media	Alcohol-resistant foam, carbon dioxide (CO ₂), dry chemical powder, water spray/mist. [1] [2] [14]
Unsuitable extinguishing media	Full/compact water jet (splashes and spreads the burning liquid, which floats on water). [1] [2] [14]
Specific hazards	Thermal decomposition products:CO, CO ₂ . [15]
Advice for firefighters	Use self-contained breathing apparatus (SCBA). Full protective suit. [1] [2] [14]
Flash Point	-11.1°C [8]
Auto-ignition temperature	498°C [8]

6. Accidental release measures

Personal precautions	Use personal protective equipment (see Section 8). Avoid breathing vapours. [1] [2] [14]
Environmental precautions	Prevent entry into sewers, groundwater and surface water. [1] [2] [14]
Methods for containment and cleaning up	Contain the spill with a barrier. Absorb with inert material (sand, vermiculite, diatomaceous earth). Collect into sealed, labelled containers. Do not release into drains. Remove ignition sources; use non-sparking tools. [1] [2] [14]
Related sections	8; 13

7. Handling and storage

Precautions	Work in a fume hood or with adequate ventilation. No eating, drinking or smoking in the work area. [1] [2] [14]
Storage temperature	Store at room temperature (15-25°C) or as indicated on the label. [1] [2] [14]
Humidity	Store in a dry place (<60% RH). [1] [2] [14]
Light	Protect from direct sunlight. [1] [2] [14]
Incompatible materials	Strong oxidizers, Ignition sources, open flames. [15]

8. Exposure controls/personal protection

8.1 Control parameters

OEL — NDS (Poland)	NDS = 1.6 mg/m ³ (TWA) — Polish MRPiPS Regulation (NDS/NDSCh list) [21]
OEL (EU)	OEL-TWA: 0.2 ppm (0.66 mg/m ³) — BOELV CMD 2004/37 (2022/431) — “skin” notation [11]
DNEL	No data available.
PNEC	No data available.

8.2 Personal protective equipment (PPE) [\[5\]](#)[\[6\]](#)[\[18\]](#)



Chemical-resistant protective gloves
EN ISO 374-1:2016+A1:2018
nitrile (min. 0.11 mm)



Closed safety spectacles or goggles
EN ISO 16321-1:2022 / EN 166:2001



Closed safety footwear with toe protection
EN ISO 20345:2022 (S2/S3)

9. Physical and chemical properties

Property (item 9.1)	Value	Source
Physical state	Liquid	

Property (item 9.1)	Value	Source
Colour	No data available.	
Odour	No data available.	
pH (1% aqueous solution)	Not applicable	
Melting point	5.558°C [8]	
Boiling point	80.08°C [8]	
Flash point	-11.1°C [8]	
Flammability	Flam. Liq. 2 (H225) [3][10]	
Lower and upper explosion limit	No data available.	
Density (20°C)	0.879 g/cm ³ [8]	
Vapour pressure	12.7 kPa (95.2 mmHg, 25°C) [8]	
Relative vapour density	No data available.	
Dynamic viscosity	0.604 mPa·s [8]	
Kinematic viscosity	No data available.	
Refractive index n _D ²⁰	1.5011 [8]	
Auto-ignition temperature	498°C [8]	
Decomposition temperature	Not applicable	
Surface Tension	28.2 mN/m [8]	
Water solubility (20°C)	1.79 g/L, 25°C [8]	
Particle characteristics	Not applicable	
Partition coefficient n-octanol/water (log value)	2.13 [8]	
TPSA	0 Å ² [7]	
HBD / HBA	No data available. / No data available.	
Rotatable bonds	No data available.	
Molar mass	78.11 g/mol [7]	
Molecular formula	C ₆ H ₆ [7]	

10. Stability and reactivity

Reactivity	Stable under normal storage and handling conditions. [15]
Chemical stability	Thermally stable under recommended conditions. [15]
Hazardous reactions	No hazardous reactions known under normal conditions. [15]
Conditions to avoid	High temperatures, direct sunlight, moisture. [15]
Incompatible materials	Strong oxidizers, Ignition sources, open flames. [15]
Decomposition products	Thermal decomposition products:CO, CO2. [15]

11. Toxicological information

LD50 (oral)	930 mg/kg (rat) [9]
LD50 (dermal)	No data available.

LC50 (inhalation)	LC50 44000 mg/m3 (rat)
Skin irritation	Category 2 — skin irritation. [3] [10]
Eye irritation	Category 2 — eye irritation. [3] [10]
Sensitisation	No data available.
Mutagenicity	Category 1A/1B (CLP). [3] [10]
Carcinogenicity	Category 1A/1B (CLP). [3] [10]
IARC classification (carcinogenicity)	IARC Group 1 — carcinogenic to humans.
Reproductive toxicity	No data available.
STOT — single exposure	No data available.
STOT — repeated exposure	Category 1 (H372): Causes damage to organs through prolonged or repeated exposure. [3] [10]
Aspiration hazard	Category 1 (H304): May be fatal if swallowed and enters airways. [3] [10]

12. Ecological information

Aquatic toxicity	No data available.
Persistence / biodegradability	No data available.
Bioaccumulative potential	log Kow = 2.13 [8] . Low bioaccumulation potential (log Kow < 4.5 — PBT/vPvB screening criterion per ECHA Guidance R.11). [19] [20]
Mobility in soil	No data available.
PBT/vPvB assessment	Insufficient data to assess PBT/vPvB.
Endocrine disrupting properties	No information.

13. Disposal considerations

Disposal method	Hand over for disposal to licensed contractors in accordance with national and local regulations. Do not discharge into sewers.
Waste code (EWC)	16 05 06* — Laboratory and analytical chemicals (e.g. chemical reagents) containing hazardous substances. Verification of the EWC code required. [13]
Packaging	Cleaned packaging may be recycled. Contaminated packaging must be treated as hazardous waste.

14. Transport information



Class 3 — Flammable liquids

UN number	UN 1114 [12]
Proper shipping name	BENZEN [12]
Transport hazard class	3 — Flammable liquids [12]
Packing Group	II [12]
Environmental hazard	No environmental hazard indicated by GHS classification. Verification required.
Special precautions	Treat as dangerous goods until verified.
CN/HS code	CN/HS code: verification required in the Eurostat Combined Nomenclature.
Notes	Dangerous goods ADR/IMDG/IATA. Carcinogenic — see Section 2.
Environmentally hazardous (mark: fish and tree)	No

15. Regulatory information

SVHC status	SVHC status not verified against the available dataset — check the current ECHA Candidate List; do not assume absence. ^[1]
REACH Annex XIV	Not verified against the ECHA Authorisation List — check REACH Annex XIV. ^[1]
REACH Annex XVII	Subject to REACH restriction Annex XVII (entry5): Benzene — banned in toys; in substances and mixtures made available to the general public the permitted concentration is $\leq 0.1\%$ by weight. Furthermore: Subject to general entries 28–30 of REACH Annex XVII (CMR substance cat. 1A/1B): sale to the general public prohibited — supply to professional users only. ^[1]
Verification date	2026-07-16

16. Other information

Legal status of the harmonised classification: CLP — Regulation (EC) No 1272/2008, Annex VI (current ECHA harmonised inventory, as at the issue date of this sheet). Entries entering into force after 16.07.2026 were omitted as future (not yet applicable).

Data aggregated automatically from public reference databases (PubChem, ECHA, NIST and others).

Full text of H statements

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Full text of P statements

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P233	Keep container tightly closed
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P308+P313	IF exposed or concerned: Get medical advice/attention
P314	Get medical advice/attention if you feel unwell
P331	Do NOT induce vomiting
P332+P313	If skin irritation occurs: Get medical advice/attention

P337+P313	If eye irritation persists: Get medical advice/attention
P370+P378	In case of fire: Use appropriate media to extinguish
P403+P235	Store in a well-ventilated place: Keep cool
P405	Store locked up
P501	Dispose of contents/container to an approved waste collection point

Abbreviations

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging (Reg. (EC) 1272/2008)
CMR	Carcinogenic, Mutagenic, toxic to Reproduction
DNEL	Derived No-Effect Level
EC	European Community number
EPI	Personal protective equipment
GHS	Globally Harmonized System
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code
SDS	Safety Data Sheet
LC50	Lethal Concentration, 50%
LD50	Lethal Dose, 50%
NDS	Maximum admissible concentration (workplace, PL)
NDSCh	Short-term exposure limit (PL)
OEL	Occupational Exposure Limit
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Reg. (EC) 1907/2006)
STOT	Specific Target Organ Toxicity
SVHC	Substance of Very High Concern
TPSA	Topological Polar Surface Area
vPvB	very Persistent and very Bioaccumulative

Version history

v1 (16.07.2026)	Prepared on the basis of the ECHA harmonised classification (Annex VI to CLP, ATP 23).
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References

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- [2] European Commission. Reg.(EU) 2020/878 — amending Annex II REACH. OJ EU L 203/2020. From 01.01.2023. URL: <https://eur-lex.europa.eu/eli/reg/2020/878/oj> Accessed: 2026-07-16.
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- [6] ISO. ISO 3864-1:2011 — Safety colours and safety signs. URL: <https://www.iso.org/standard/51021.html> Accessed: 2026-07-16.
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- [10] ECHA. European Chemicals Agency — harmonised classification inventory (CLP Annex VI). URL: <https://echa.europa.eu> Accessed: 2026-07-16.

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- [12] UNECE. European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), 2025 edition (ECE/TRANS/352). Geneva: United Nations. URL: <https://unece.org/adr> Accessed: 2026-07-16.
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- [14] European Chemicals Agency (ECHA). Guidance on the Compilation of Safety Data Sheets. Version 4.0. Helsinki: European Chemicals Agency, 2020. URL: https://echa.europa.eu/documents/10162/2324906/sds_en.pdf Accessed: 2026-07-16.
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- [16] Act of 26 June 1974 — Labour Code (Poland), Art. 176 § 1. Journal of Laws 2023 item 1465. URL: <https://isap.sejm.gov.pl> Accessed: 2026-07-16.
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- [21] MRIPS Regulation of 12.06.2018 — NDS/NDN. Journal of Laws 2024 item 1017. URL: <https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20240001017> Accessed: 2026-07-16.

External links

NIST: <https://webbook.nist.gov/cgi/cbook.cgi?ID=71-43-2>

ChEMBL: https://www.ebi.ac.uk/chembl/compound_report_card/CHEMBL277500

NFPA 704 (supplementary information — NFPA/USA system; not a required element of an EU safety data sheet under REACH Annex II)



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