

Safety data sheet

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BASF safety data sheet. This is a translation of the country-specific safety data sheet into a language other than that required by law. This document does not replace the safety data sheet provided according to Regulation (EC) No 1907/2006.

Date / Revised: 15.08.2023

Version: 2.0

Date previous version: 07.09.2022

Previous version: 1.0

Date / First version: 07.09.2022

Product: **Bio-Benzene**

(ID no. 30791600/SDS_GEN_DE/EN)

Date of print 27.04.2026

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

1.1. Product identifier

Bio-Benzene

Chemical name: Benzene

CAS Number: 71-43-2

REACH registration number: 01-2119447106-44-0005, 01-2119447106-44-0006

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

Relevant identified uses: Chemical

Recommended use: Only to be used as intermediate according to the REACH Regulation (EC) No 1907/2006, art. 18

1.3. Details of the supplier of the safety data sheet

Company:

BASF SE

67056 Ludwigshafen

GERMANY

Operating Division Petrochemicals

Telephone: +49 621 60-42151

E-mail address: sds-petrochemicals@basf.com

1.4. Emergency telephone number

International emergency number:

Telephone: +49 180 2273-112

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SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

Asp. Tox. 1	H304 May be fatal if swallowed and enters airways.
Flam. Liq. 2	H225 Highly flammable liquid and vapour.
Skin Corr./Irrit. 2	H315 Causes skin irritation.
Eye Dam./Irrit. 2	H319 Causes serious eye irritation.
Muta. 1B	H340 May cause genetic defects.
Carc. 1A	H350 May cause cancer.
STOT RE 1	H372 Causes damage to organs (Blood) through prolonged or repeated exposure.
Aquatic Chronic 3	H412 Harmful to aquatic life with long lasting effects.

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

According to Regulation (EC) No 1272/2008 [CLP]

Pictogram:



Signal Word:

Danger

Hazard Statement:

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H304	May be fatal if swallowed and enters airways.
H350	May cause cancer.
H340	May cause genetic defects.
H372	Causes damage to organs (Blood) through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P201	Obtain special instructions before use.

Precautionary Statements (Response):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
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Precautionary Statements (Storage):

P405 Store locked up.

Precautionary Statements (Disposal):

P501 Dispose of contents and container to hazardous or special waste collection point.

| Hazard determining component(s) for labelling: toluene, benzene

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture. See section 12 - Results of PBT and vPvB assessment.

Product does not contain a substance above legal limits included in the list established in accordance with Article 59(1) of Regulation (EC) No 1907/2006 for having endocrine disrupting properties or is identified to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).
Skin resorption hazard.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Chemical nature

benzene

Content (W/W): $\geq 99,5 \%$

CAS Number: 71-43-2

EC-Number: 200-753-7

INDEX-Number: 601-020-00-8

Substance with EU occupational exposure limit

Asp. Tox. 1

Flam. Liq. 2

Skin Corr./Irrit. 2

Eye Dam./Irrit. 2

Muta. 1B

Carc. 1A

STOT RE (Blood) 1

Aquatic Chronic 3

H225, H319, H315, H304, H350, H340, H372,

H412

Regulatory relevant ingredients

benzene

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Content (W/W): $\geq 99,5\%$ - $\leq 100\%$

CAS Number: 71-43-2

EC-Number: 200-753-7

INDEX-Number: 601-020-00-8

Substance with EU occupational exposure limit

Asp. Tox. 1

Flam. Liq. 2

Skin Corr./Irrit. 2

Eye Dam./Irrit. 2

Muta. 1B

Carc. 1A

STOT RE (Blood) 1

Aquatic Chronic 3

H225, H319, H315, H304, H350, H340, H372, H412

toluene

Content (W/W): $\geq 0\%$ - $< 0,3\%$

CAS Number: 108-88-3

EC-Number: 203-625-9

INDEX-Number: 601-021-00-3

Asp. Tox. 1

Flam. Liq. 2

Skin Corr./Irrit. 2

Repr. 2 (unborn child)

STOT SE 3 (drowsiness and dizziness)

STOT RE (Central nervous system) 2

Aquatic Chronic 3

H225, H315, H304, H336, H361d, H373, H412

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

3.2. Mixtures

Not applicable

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:

Immediately wash thoroughly with soap and water, seek medical attention.

On contact with eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

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

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

Hazards: When inhaled (e.g. during vomiting) risk of pulmonary oedema and/or pneumonia.

Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.
(Further) symptoms and / or effects are not known so far

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

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote. The presence of benzene in the body can be detected by determining the amount of this substance in the blood and/or urine.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:
water spray, dry powder, foam, carbon dioxide

Unsuitable extinguishing media for safety reasons:
No data available.

5.2. Special hazards arising from the substance or mixture

Advice: Highly flammable. Cool endangered containers with water-spray. See SDS section 7 - Handling and storage.

5.3. Advice for fire-fighters

Special protective equipment:
Wear a self-contained breathing apparatus. Special protective equipment for firefighters

Further information:
Evacuate area of all unnecessary personnel. Fight fire from maximum distance.

Extend fire extinguishing measures to the surroundings. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

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SECTION 6: Accidental Release Measures

High risk of slipping due to leakage/spillage of product.

Release of substance/product can cause fire or explosion. Shut off or stop source of leak. Shut off or stop released substance/product under safe conditions.

Pack in tightly closed containers for disposal.

6.1. Personal precautions, protective equipment and emergency procedures

Handle in accordance with good industrial hygiene and safety practice.

Avoid all sources of ignition: heat, sparks, open flame. Use antistatic tools. Avoid contact with the skin, eyes and clothing.

Take off immediately all contaminated clothing.

6.2. Environmental precautions

Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

Pick up with suitable appliance and dispose of. Spills should be contained, solidified, and placed in suitable containers for disposal. Dispose of absorbed material in accordance with regulations.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. Avoid all direct contact with the substance/product. Ensure thorough ventilation of stores and work areas. Change clothes immediately after contamination. Refill and handle product only in closed system.

Protection against fire and explosion:

Avoid all sources of ignition: heat, sparks, open flame. Ground all transfer equipment properly to prevent electrostatic discharge.

Electrical devices must meet the specified temperature class.

| Temperature class: T1 (Autoignition temperature > 450 °C).

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7.2. Conditions for safe storage, including any incompatibilities

No applicable information available.

Further information on storage conditions: Keep container tightly closed in a cool, well-ventilated place. Protect from direct sunlight. Protect against heat.

Storage class according to TRGS 510 (originally VCI, Germany): (3) Flammable liquids

7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

The surveillance of the workplace by exposure measurements may be necessary, in order to prove the efficiency of safety measures, for example ventilation or the need of respiratory protection. Since this requires a specific competency, only accredited laboratories should be contracted. Regarding suitable methods to assess inhalation exposure, the European Standards EN 482, 689 and 14042 are to be considered. In addition, the TRGS 402 has to be observed in Germany.

71-43-2: benzene

Skin Designation (Directive 2004/37/EC)

The substance can be absorbed through the skin.

Skin Designation (TRGS 910)

The substance can be absorbed through the skin.

Excursion factor (TRGS 910)

Ceiling limit value/factor: 8

Factor by which the average shift value (SMW) can be exceeded four times per shift during a maximum period of 15 minutes each.

Tolerance Concentration (risk 4:1000): 1,9 mg/m³ ; 0,6 ppm (TRGS 910)

Acceptance concentration (risk 4:10000): 0,2 mg/m³ ; 0,06 ppm (TRGS 910)

TWA value 3,25 mg/m³ ; 1 ppm (Directive 2004/37/EC)

TWA value 0,66 mg/m³ ; 0,2 ppm (Directive 2004/37/EC)

The expiration date of this limit: 05 April 2026

TWA value 1,65 mg/m³ ; 0,5 ppm (Directive 2004/37/EC)

The expiration date of this limit: 05 April 2024

108-88-3: toluene

Skin Designation (OEL (EU))

The substance can be absorbed through the skin.

STEL value 384 mg/m³ ; 100 ppm (OEL (EU))

indicative

TWA value 192 mg/m³ ; 50 ppm (OEL (EU))

indicative

Short Term Exposure Classification: (TRGS 900 (DE))

Category II: Substances with a resorptive effect

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Skin Designation (TRGS 900 (DE))

The substance can be absorbed through the skin.

OEL 190 mg/m³ ; 50 ppm (TRGS 900 (DE))

Ceiling limit value/factor: 2

If the occupational exposure limit value (AGW) and the biological limit value (BGW) are complied with, there should be no risk of damage for the unborn child (see TRGS 900, Number 2.7)

PNEC

freshwater: 1,9 mg/l

marine water: 1,9 mg/l

intermittent release: 1,9 mg/l

STP: 39 mg/l

sediment (freshwater): 33 mg/kg

soil: 4,8 mg/kg

DNEL

worker:

Long-term exposure- systemic effects, Inhalation: 1,9 mg/m³, 0,6 ppm

8.2. Exposure controls

Personal protective equipment

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Suitable respiratory protection for lower concentrations or short-term effect: Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A) Suitable respiratory protection for higher concentrations or long-term effect: Self-contained breathing apparatus.

Hand protection:

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):

fluoroelastomer (FKM) - 0.7 mm coating thickness

Polyethylene-Laminate (PE laminate) - ca. 0.1 mm coating thickness

Suitable materials against splashes (recommended: At least protective index 1, corresponding > 10 minutes of permeation time according to EN ISO 374-1)

butyl rubber (butyl) - 0.7 mm coating thickness

nitrile rubber (NBR) - 0.4 mm coating thickness

polyvinylchloride (PVC) - 0.7 mm coating thickness

Manufacturer's directions for use should be observed because of great diversity of types.

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Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

Ensure adequate ventilation. Avoid contact with the skin, eyes and clothing. Avoid inhalation of vapour. Avoid exposure - obtain special instructions before use. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Handle in accordance with good industrial hygiene and safety practice. At the end of the shift the skin should be cleaned and skin-care agents applied.

Environmental exposure controls

All appropriate measures must be taken to prevent the release of this product to the environment and to limit the dispersion of any release when it occurs. Suitable risk management measures should be in place.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

State of matter:	liquid	
Form:	liquid	
Colour:	colourless, clear	
Odour:	aromatic	
Odour threshold:	not determined	
Melting point:	5,49 °C	
	Literature data.	
Boiling point:	80,1 °C	
	(1.013 hPa)	
Flammability:	Highly flammable.	(derived from flash - and boiling point)
Lower explosion limit:	For liquids not relevant for classification and labelling.	
Upper explosion limit:	For liquids not relevant for classification and labelling.	

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Flash point:	-11 °C	
Auto-ignition temperature:	498 °C	
Thermal decomposition:	Vapours may form explosive mixture with air.	
pH value:	not applicable	
Viscosity, kinematic:	No data available.	
Viscosity, dynamic:	0,604 mPa.s (25 °C)	Literature data.
Thixotropy:	not thixotropic	
Solubility in water:	Literature data.	
	1,88 g/l (23,5 °C)	
Solubility (qualitative) solvent(s):	organic solvents miscible	
Partitioning coefficient n-octanol/water (log Kow):	2,13 (25 °C; pH value: 7)	Literature data.
Vapour pressure:	100 hPa (20 °C)	1.000 hPa (79,7 °C)
Relative density:	0,88 (20 °C)	
Density:	0,88 g/cm ³ (20 °C)	
Relative vapour density (air):	> 1 (20 °C)	(estimated)
	Heavier than air.	

Particle characteristics

Particle size distribution: The substance / product is marketed or used in a non solid or granular form. -

9.2. Other information

Information with regard to physical hazard classes

Explosives

Explosion hazard: Based on the chemical structure there is no indication of explosive properties.

Oxidizing properties

Fire promoting properties: Based on its structural properties the product is not classified as oxidizing.
Study scientifically not justified.

Pyrophoric properties

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Self-ignition temperature:

Test type: Spontaneous self-ignition at room-temperature.

Based on its structural properties the product is not classified as self-igniting.

Self-heating substances and mixtures

Self heating ability: not applicable, the product is a liquid

Substances and mixtures, which emit flammable gases in contact with water

Formation of flammable gases:

Forms no flammable gases in the presence of water.

Corrosion to metals

No corrosive effect on metal.

Other safety characteristics

Radioactivity:

not radioactive for transport purposes

pKA:

The substance does not dissociate., Study scientifically not justified.

Adsorption/water - soil:

KOC: 165; log KOC: 2,22

(calculated)

Adsorption to solid soil phase is not expected.

Surface tension:

Based on chemical structure, surface activity is not to be expected.

Molar mass:

78,11 g/mol

Evaporation rate:

Value can be approximated from Henry's Law Constant or vapor pressure.

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

No hazardous reactions if stored and handled as prescribed/indicated., When heated can give off ignitable vapours., Vapours may form explosive mixture with air.

Corrosion to metals: No corrosive effect on metal.

Formation of flammable gases:

Remarks:

Forms no flammable gases in the presence of water.

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10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Peroxides: The product does not contain peroxides.

10.3. Possibility of hazardous reactions

No hazardous reactions if stored and handled as prescribed/indicated.

10.4. Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame. Avoid direct sunlight. Avoid electro-static charge.

10.5. Incompatible materials

Substances to avoid:
bromine, chlorine, iodine, sulfur, oxidizing agents, acids

10.6. Hazardous decomposition products

No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Assessment of acute toxicity:

Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation. Virtually nontoxic after a single ingestion.

Experimental/calculated data:

LD50 rat (oral): > 2.000 mg/kg (OECD Guideline 401)

Literature data.

LD50 rat (oral): 5.970 mg/kg (other)

Literature data.

LC50 rat (by inhalation): 43,76 mg/l 4 h (OECD Guideline 403)

Literature data. The vapour was tested.

LD50 rat (dermal): 17.574 mg/kg (other)

Literature data.

LD50 rabbit (dermal): > 8.260 mg/kg (other)

Literature data.

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Irritation

Assessment of irritating effects:

Eye contact causes irritation. Skin contact causes irritation.

Experimental/calculated data:

Skin corrosion/irritation

rabbit: Irritant. (OECD Guideline 404)

Literature data.

Serious eye damage/irritation

rabbit: Irritant. (other)

Literature data.

Respiratory/Skin sensitization

Assessment of sensitization:

Skin sensitizing effects were not observed in animal studies.

Experimental/calculated data:

Guinea pig maximization test guinea pig: Non-sensitizing. (OECD Guideline 406)

Literature data.

Guinea pig maximization test guinea pig: Non-sensitizing. (OECD Guideline 406)

Literature data.

Germ cell mutagenicity

Assessment of mutagenicity:

Capable of causing genetic defects.

Carcinogenicity

Assessment of carcinogenicity:

The substance caused cancer in animal studies.

Reproductive toxicity

Assessment of reproduction toxicity:

The results of animal studies gave no indication of a fertility impairing effect.

Developmental toxicity

Assessment of teratogenicity:

In animal studies the substance did not cause malformations.

Experiences in humans

Experimental/calculated data:

Has a carcinogenic effect in human beings.

High concentrations have a narcotizing effect.

Specific target organ toxicity (single exposure)

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Assessment of STOT single:

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

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

Repeated exposure to small quantities may affect certain organs. Damages blood cells.

Aspiration hazard

May also damage the lung at swallowing (aspiration hazard).

Interactive effects

No data available.

11.2. Information on other hazards

Endocrine disrupting properties

The substance is not identified to have endocrine disrupting properties according to Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 nor is included in the Candidate List of substances of very high concern according to EU REACH Article 59 for having endocrine disrupting properties.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:

Acutely toxic for aquatic organisms. Harmful to aquatic organisms based on long-term (chronic) toxicity study data. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:

LC50 (96 h) 5,3 mg/l, *Oncorhynchus mykiss* (other, Flow through.)

Literature data.

Aquatic invertebrates:

EC50 (48 h) 10 mg/l, *Daphnia magna* (other, static)

Literature data.

Aquatic plants:

EC50 (72 h) 100 mg/l (growth rate), *Selenastrum capricornutum* (OECD Guideline 201, static)

Literature data.

Microorganisms/Effect on activated sludge:

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EC50 (24 h) 13 mg/l, *Nitrosomonas* sp. (other, aquatic)

EC50 (15 h) 520 mg/l, activated sludge (other, aquatic)
Nominal concentration. Literature data.

Chronic toxicity to fish:

No observed effect concentration (32 d) 0,8 mg/l, *Pimephales promelas* (OECD Guideline 210, Flow through.)

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (7 d) 3 mg/l, *Ceriodaphnia dubia* (other, semistatic)
Literature data.

Assessment of terrestrial toxicity:

No data available.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H₂O):

Readily biodegradable (according to OECD criteria). Easily eliminated from water.

Elimination information:

> 80 % BOD of the ThOD (28 d) (OECD 301F; ISO 9408; 92/69/EEC, C.4-D) (aerobic, activated sludge, domestic) Readily biodegradable.

> 90 % DOC reduction (6 d) (OECD Guideline 302 B) (aerobic, activated sludge) Easily eliminated from water.

Literature data.

Assessment of stability in water:

In contact with water the substance will hydrolyse slowly.

Information on Stability in Water (Hydrolysis):

According to structural properties, hydrolysis is not expected/probable.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:

No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow).

Bioaccumulation potential:

No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow).

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12.4. Mobility in soil

Assessment transport between environmental compartments:

Volatility: The substance will rapidly evaporate into the atmosphere from the water surface.

Adsorption in soil: Adsorption to solid soil phase is not expected.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative). Self classification

12.6. Endocrine disrupting properties

The substance is not identified to have endocrine disrupting properties according to Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 nor is included in the Candidate List of substances of very high concern according to EU REACH Article 59 for having endocrine disrupting properties.

12.7. Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

12.8. Additional information

Other ecotoxicological advice:

Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations. The product should not be allowed to reach either ground or open waters.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Dispose of in accordance with national, state and local regulations.

Contaminated packaging:

Disposal must be made according to official regulations.

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SECTION 14: Transport Information

Land transport

ADR

UN number or ID number: UN1114
UN proper shipping name: BENZENE

Transport hazard class(es): 3
Packing group: II
Environmental hazards: no
Special precautions for user: Tunnel code: D/E

RID

UN number or ID number: UN1114
UN proper shipping name: BENZENE

Transport hazard class(es): 3
Packing group: II
Environmental hazards: no
Special precautions for user: None known

Inland waterway transport

ADN

UN number or ID number: UN1114
UN proper shipping name: BENZENE

Transport hazard class(es): 3
Packing group: II
Environmental hazards: no
Special precautions for user: None known

Transport in inland waterway vessel

UN number or ID number: UN1114
UN proper shipping name: BENZENE

Transport hazard class(es): 3, N3, CMR
Packing group: II
Environmental hazards: yes
Type of inland waterway vessel: C

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Cargo tank design: 2
Cargo tank type: 2

Sea transport

IMDG

UN number or ID number: UN 1114
UN proper shipping name: BENZENE

Transport hazard class(es): 3
Packing group: II
Environmental hazards: no
Marine pollutant: NO
Special precautions for user: EmS: F-E; S-D

Air transport

IATA/ICAO

UN number or ID number: UN 1114
UN proper shipping name: BENZENE

Transport hazard class(es): 3
Packing group: II
Environmental hazards: No Mark as dangerous for the environment is needed
Special precautions for user: None known

14.1. UN number or ID number

See corresponding entries for "UN number or ID number" for the respective regulations in the tables above.

14.2. UN proper shipping name

See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

14.3. Transport hazard class(es)

See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

14.4. Packing group

See corresponding entries for "Packing group" for the respective regulations in the tables above.

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14.5. Environmental hazards

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

14.6. Special precautions for user

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

14.7. Maritime transport in bulk according to IMO instruments

Regulation:	IBC-Code
Product name:	Benzene and Mixtures having 10% benzene or more
Pollution category:	Y
Ship Type:	3

SECTION 15: Regulatory Information

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

Prohibitions, Restrictions and Authorizations

Chemical Prohibition Ordinance (DE): Annex 2

Restriction Type: Restricted substance

Annex XVII of Regulation (EC) No 1907/2006: Number on List: 3, 40, 5, 48, 5, 75

Hazardous Incident Ordinance (Germany):

List entry in regulation: 1.2.5.2

Directive 2012/18/EU - Control of Major Accident Hazards involving dangerous substances (EU):

List entry in regulation: P5b

Classification according to 'TA-Luft' (Germany):

5.2.7.1.1 class III: Carcinogenic substances class III

Water hazard class (§6 AwSV para.4 (Legal binding announcement of the substance in the Federal Gazette)): (3) Strongly water polluting. ID-No.: 29

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Law on the Protection of Working Youth

The Maternity Protection Act needs to be considered.

List of carcinogenic, mutagenic or reprotoxic substances (TRGS 905)

The specifications of the Technical Rule for Hazardous Substances (TRGS) 401 must be observed (TRGS 401: Risks resulting from skin contact - identification, assessment, measures).

Regulation on prohibitions and restrictions on the marketing of dangerous substances, preparations and goods in accordance with the chemical law (Germany)

German Regulation TA Luft (Technical Instruction on Air Quality Control, i.e. first Directive to the Federal Immission Control Ordinance)

Observe TRGS 910 on cmr substances (German Technical Rule for Hazardous Substances)

15.2. Chemical Safety Assessment

A chemical safety assessment acc. to art. 14 of Regulation (EC) No 1907/2006 is not required, because art. 2 (8) of the same regulation applies.

SECTION 16: Other Information

Assessment of the hazard classes according to UN GHS criteria (most recent version)

Carc. 1A

Muta. 1B

STOT RE (Blood) 1

Asp. Tox. 1

Eye Dam./Irrit. 2A

Skin Corr./Irrit. 2

Aquatic Acute 2

Flam. Liq. 2

Aquatic Chronic 3

Full text of the classifications, including the hazard classes and the hazard statements, if mentioned in section 2 or 3:

Asp. Tox.	Aspiration hazard
Flam. Liq.	Flammable liquids
Skin Corr./Irrit.	Skin corrosion/irritation
Eye Dam./Irrit.	Serious eye damage/eye irritation
Muta.	Germ cell mutagenicity
Carc.	Carcinogenicity
STOT RE	Specific target organ toxicity — repeated exposure
Aquatic Chronic	Hazardous to the aquatic environment - chronic
Repr.	Reproductive toxicity
STOT SE	Specific target organ toxicity — single exposure
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H304	May be fatal if swallowed and enters airways.
H350	May cause cancer.
H340	May cause genetic defects.

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H372	Causes damage to organs (Blood) through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.
H336	May cause drowsiness or dizziness.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs (Central nervous system) through prolonged or repeated exposure.

Abbreviations

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ADN = The European Agreement concerning the International Carriage of Dangerous Goods by Inland waterways. ATE = Acute Toxicity Estimates. CAO = Cargo Aircraft Only. CAS = Chemical Abstract Service. CLP = Classification, Labelling and Packaging of substances and mixtures. DIN = German national organization for standardization. DNEL = Derived No Effect Level. EC50 = Effective concentration median for 50% of the population. EC = European Community. EN = European Standards. IARC = International Agency for Research on Cancer. IATA = International Air Transport Association. IBC-Code = Intermediate Bulk Container code. IMDG = International Maritime Dangerous Goods Code. ISO = International Organization for Standardization. STEL = Short-Term Exposure Limit. LC50 = Lethal concentration median for 50% of the population. LD50 = Lethal dose median for 50% of the population. TLV = Threshold Limit Value. MARPOL = The International Convention for the Prevention of Pollution from Ships. NEN = Dutch Norm. NOEC = No Observed Effect Concentration. OEL = Occupational Exposure Limit. OECD = Organization for Economic Cooperation and Development. PBT = Persistent, Bioaccumulative and Toxic. PNEC = Predicted No Effect Level. PPM = Parts per million. RID = The European Agreement concerning the International Carriage of Dangerous Goods by Rail. TWA = Time Weight Average. UN-number = UN number at transport. vPvB = very Persistent and very Bioaccumulative.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.