

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Chlorbenzene

Creation date	17th July 2018	Version	4.0
Revision date	20th March 2023		

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

- 1.1. Product identifier**
- |                      |                             |
|----------------------|-----------------------------|
| Substance / mixture  | Chlorbenzene                |
| Chemical name        | substance                   |
| CAS number           | chlorobenzene               |
| Index number         | 108-90-7                    |
| EC (EINECS) number   | 602-033-00-1                |
| Registration number  | 203-628-5                   |
| Other substance name | 01-2119432722-45-0000       |
|                      | Fenylchlorid, Benzolchlorid |
- 1.2. Relevant identified uses of the substance or mixture and uses advised against**
- Substance's intended use**  
Chemical production, analytical chemistry, laboratory synthesis, industrial applications.
- Substance uses advised against**  
The product should not be used in ways other than those referred in Section 1.
- 1.3. Details of the supplier of the safety data sheet**
- Supplier**
- |                             |                                  |
|-----------------------------|----------------------------------|
| Name or trade name          | Ing. Petr Švec - PENTA s.r.o.    |
| Address                     | Radiová 1122/1, Praha 10, 102 00 |
|                             | Czech Republic                   |
| Identification number (CRN) | 02096013                         |
| VAT Reg No                  | CZ02096013                       |
| Phone                       | +420 226 060 681                 |
| E-mail                      | info@pentachemicals.eu           |
| Web address                 | www.pentachemicals.eu            |
- Competent person responsible for the safety data sheet**
- |        |                               |
|--------|-------------------------------|
| Name   | Ing. Petr Švec - PENTA s.r.o. |
| E-mail | info@pentachemicals.eu        |
- 1.4. Emergency telephone number**  
European emergency number: 112

#### SECTION 2: Hazards identification

- 2.1. Classification of the substance or mixture**  
**Classification of the substance in accordance with Regulation (EC) No 1272/2008**

The substance is classified as dangerous.

Flam. Liq. 3, H226  
Skin Irrit. 2, H315  
Acute Tox. 4, H332  
Aquatic Chronic 2, H411

Full text of all classifications and hazard statements is given in the section 16.

**Most serious adverse physico-chemical effects**

Flammable liquid and vapour.

**Most serious adverse effects on human health and the environment**

Causes skin irritation. Harmful if inhaled. Toxic to aquatic life with long lasting effects.

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**2.2. Label elements**

**Hazard pictogram**



**Signal word**

Warning

**Dangerous substance**

chlorobenzene  
(Index: 602-033-00-1; CAS: 108-90-7)

**Hazard statements**

- H226 Flammable liquid and vapour.
- H315 Causes skin irritation.
- H332 Harmful if inhaled.
- H411 Toxic to aquatic life with long lasting effects.

**Precautionary statements**

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P261 Avoid breathing vapours.
- P273 Avoid release to the environment.

**2.3. Other hazards**

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended.

**SECTION 3: Composition/information on ingredients**

**3.1. Substances**

**Chemical characterization**

The substance specified below.

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
Index: 602-033-00-1 CAS: 108-90-7 EC: 203-628-5 Registration number: 01-2119432722-45-0000	<b>substance main component</b> chlorobenzene	≥99	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Acute Tox. 4, H332 Aquatic Chronic 2, H411	1

**Notes**

1 A substance for which exposure limits are set.

Full text of all classifications and hazard statements is given in the section 16.

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#### SECTION 4: First aid measures

##### 4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

##### **If inhaled**

Terminate the exposure immediately; move the affected person to fresh air. Protect the person against growing cold. Provide medical treatment if irritation, dyspnoea or other symptoms persist.

##### **If on skin**

Remove contaminated clothes. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists. Rinse skin with water or shower.

##### **If in eyes**

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. Rinsing should continue at least for 10 minutes. Provide medical treatment, specialized if possible.

##### **If swallowed**

Provide medical treatment.

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

##### **If inhaled**

Cough, headache.

##### **If on skin**

Causes skin irritation.

##### **If in eyes**

Not expected.

##### **If swallowed**

Irritation, nausea.

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

Symptomatic treatment.

#### SECTION 5: Firefighting measures

##### 5.1. Extinguishing media

##### **Suitable extinguishing media**

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

##### **Unsuitable extinguishing media**

Water - full jet.

##### 5.2. Special hazards arising from the substance or mixture

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

##### 5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Closed containers with the product near the fire should be cooled with water. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

#### SECTION 6: Accidental release measures

##### 6.1. Personal precautions, protective equipment and emergency procedures

Provide sufficient ventilation. The substance is flammable. Remove all ignition sources. Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Do not inhale mist/vapours/spray. Prevent contact with skin and eyes.

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#### 6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water. Do not allow to enter drains.

#### 6.3. Methods and material for containment and cleaning up

Spilled product should be covered with suitable (non-flammable) absorbing material (sand, diatomaceous earth, earth and other suitable absorption materials); to be contained in well closed containers and removed as per the Section 13. In the event of leakage of the substantial amount of the product, inform fire brigade and other competent bodies. After removal of the product, wash the contaminated site with plenty of water. Do not use solvents.

#### 6.4. Reference to other sections

See the Section 7, 8 and 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Prevent formation of gases and vapours in flammable or explosive concentrations and concentrations exceeding the occupational exposure limits. The product should be used only in the areas where it is not in contact with open fire and other ignition sources. Use non-sparking tools. Use of antistatic clothes and footwear is recommended. Do not inhale mist/vapours/spray. Prevent contact with skin and eyes. No smoking. Wash hands and exposed parts of the body thoroughly after handling. Use only outdoors or in a well-ventilated area. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Take action to prevent static discharges. Avoid release to the environment.

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

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Do not expose to sunlight. Keep container tightly closed. Keep cool.

#### The specific requirements or rules relating to the substance/mixture

Solvent vapours are heavier than air and accumulate especially near the floor where they may form an explosive mixture with the air.

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

not available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### European Union

##### Commission Directive 2006/15/EC

Substance name (component)	Type	Value
chlorobenzene (CAS: 108-90-7)	OEL 8 hours	23 mg/m <sup>3</sup>
	OEL 8 hours	5 ppm
	OEL 15 minutes	70 mg/m <sup>3</sup>
	OEL 15 minutes	15 ppm

##### DNEL

chlorobenzene

Workers / consumers	Route of exposure	Value	Effect	Value determination	Source
Workers	Inhalation	23 mg/m <sup>3</sup>	Chronic effects systemic		
Workers	Inhalation	70 mg/m <sup>3</sup>	Acute effects systemic		
Workers	Dermal	15 mg/kg of dry substance of sediment	Acute effects systemic		
Workers	Dermal	5 mg/kg bw/day	Chronic effects systemic		

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#### PNEC

chlorobenzene

Route of exposure	Value	Value determination	Source
Soil (agricultural)	0.166 mg/kg		
Microorganisms in sewage treatment	1.4 mg/l		
Sea sediments	0.0922 mg/l		
Freshwater sediment	0.922 mg/l		
Marine water	0.0032 mg/l		
Drinking water	0.032 mg/l		

#### 8.2. Exposure controls

Follow the usual measures intended for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

##### Eye/face protection

Protective goggles.

##### Skin protection

Hand protection: Protective gloves resistant to the product (nitrile rubber). Hand protection: Protective gloves (Viton). When choosing appropriate thickness, material and permeability of the gloves, observe recommendations of their particular manufacturer. Observe other recommendations of the manufacturer. Other protection: protective workwear. Contaminated skin should be washed thoroughly.

##### Respiratory protection

Halfmask with a filter against organic vapours or a self-contained breathing apparatus as appropriate if exposure limit values of substances are exceeded or in a poorly ventilated environment.

##### Thermal hazard

Not available.

##### Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2. Collect spillage.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	liquid
Colour	colorless to yellowish
Odour	characteristic
Melting point/freezing point	-45 °C
Boiling point or initial boiling point and boiling range	132 °C
Flammability	data not available
Lower and upper explosion limit	
bottom	1,3 %
upper	11 %
Flash point	28 °C
Auto-ignition temperature	data not available
Decomposition temperature	data not available
pH	data not available
Kinematic viscosity	data not available
Solubility in water	almost insoluble
Partition coefficient n-octanol/water (log value)	2,89
Vapour pressure	data not available
Density and/or relative density	
Density	1,106 g/cm <sup>3</sup> at 20 °C
Relative vapour density	data not available

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Particle characteristics	data not available
Form	liquid
<b>9.2. Other information</b>	
Oxidising properties	It is not oxidising.
Ignition temperature	590 °C

#### SECTION 10: Stability and reactivity

##### 10.1. Reactivity

The substance is flammable.

##### 10.2. Chemical stability

The product is stable under normal conditions.

##### 10.3. Possibility of hazardous reactions

Unknown.

##### 10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

##### 10.5. Incompatible materials

Protect against strong acids, bases and oxidizing agents.

##### 10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

#### SECTION 11: Toxicological information

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

No toxicological data is available for the substance. Inhalation of solvent vapors above values exceeding exposure limits for working environment may result in acute inhalation poisoning, depending on the level of concentration and exposure time.

##### Acute toxicity

Harmful if inhaled.

chlorobenzene

Route of exposure	Parameter	Method	Value	Exposure time	Species	Sex
Oral	LD <sub>50</sub>	OECD 401	>2000 mg/kg		Rat (Rattus norvegicus)	F/M
Inhalation	LC <sub>50</sub>	OECD 403	15.57 mg/l	4 hours	Rat (Rattus norvegicus)	

##### Skin corrosion/irritation

Causes skin irritation.

##### Serious eye damage/irritation

Based on available data the classification criteria are not met.

##### Respiratory or skin sensitisation

Based on available data the classification criteria are not met.

##### Germ cell mutagenicity

##### Carcinogenicity

Based on available data the classification criteria are not met.

##### Reproductive toxicity

Based on available data the classification criteria are not met.

##### Toxicity for specific target organ - single exposure

Based on available data the classification criteria are not met.

##### Toxicity for specific target organ - repeated exposure

Based on available data the classification criteria are not met.

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**Aspiration hazard**

Based on available data the classification criteria are not met.

**11.2. Information on other hazards**

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

**SECTION 12: Ecological information**

**12.1. Toxicity**

**Acute toxicity**

Toxic to aquatic life with long lasting effects.  
chlorobenzene

Parameter	Method	Value	Exposure time	Species	Environment
LC <sub>50</sub>		4.5 mg/l	96 hours	Fish (Lepomis macrochirus)	
EC <sub>50</sub>	OECD 202	26 mg/l	48 hours	Daphnia (Daphnia magna)	

**12.2. Persistence and degradability**

**Biodegradability**

chlorobenzene

Parameter	Method	Value	Exposure time	Environment	Result
	OECD 301F	15 %	28 days		Hardly biodegradable

not available

**12.3. Bioaccumulative potential**

Not available.

**12.4. Mobility in soil**

Not available.

**12.5. Results of PBT and vPvB assessment**

Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

**12.6. Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms as it does not meet the criteria set out in section B of Regulation (EU) No 2017/2100.

**12.7. Other adverse effects**

Not available.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

**Waste management legislation**

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

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#### SECTION 14: Transport information

##### 14.1. UN number or ID number

UN 1134

##### 14.2. UN proper shipping name

CHLOROBENZENE

##### 14.3. Transport hazard class(es)

3 Flammable liquids

##### 14.4. Packing group

III - substances presenting low danger

##### 14.5. Environmental hazards

not relevant

##### 14.6. Special precautions for user

Reference in the Sections 4 to 8.

##### 14.7. Maritime transport in bulk according to IMO instruments

not relevant

##### Additional information

Hazard identification No.

30

UN number

1134

Classification code

F1

Safety signs

3+hazardous for the environment



##### Air transport - ICAO/IATA

Packaging instructions passenger

355

Cargo packaging instructions

366

##### Marine transport - IMDG

EmS (emergency plan)

F-E, S-D

#### SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

##### 15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out.

#### SECTION 16: Other information

##### A list of standard risk phrases used in the safety data sheet

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H332	Harmful if inhaled.
H411	Toxic to aquatic life with long lasting effects.



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#### Guidelines for safe handling used in the safety data sheet

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing vapours.
P273	Avoid release to the environment.

#### Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

#### Key to abbreviations and acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
EC	Identification code for each substance listed in EINECS
EC <sub>50</sub>	Concentration of a substance when it is affected 50% of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
EU	European Union
EuPCS	European Product Categorisation System
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC <sub>50</sub>	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD <sub>50</sub>	Lethal dose of a substance in which it can be expected death of 50% of the population
log Kow	Octanol-water partition coefficient
OEL	Occupational Exposure Limits
PBT	Persistent, Bioaccumulative and Toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail
UN	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very Persistent and very Bioaccumulative
Acute Tox.	Acute toxicity
Aquatic Chronic	Hazardous to the aquatic environment (chronic)
Flam. Liq.	Flammable liquid
Skin Irrit.	Skin irritation

#### Training guidelines

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Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

**Recommended restrictions of use**

not available

**Information about data sources used to compile the Safety Data Sheet**

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

**The changes (which information has been added, deleted or modified)**

The version 4.0 replaces the SDS version from 01 March 2022. Changes were made in sections 1, 2, 13, 15 and 16.

**More information**

Classification procedure - calculation method.

**Statement**

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.