# Safety Data Sheet

# Chlorobenzene-d5

According to Regulation (EC) No. 1907/2006 (REACH)

Version number: GHS 2.1
Replaces version of: 2021-06-25 (GHS 1)

Revision: 2023-02-02

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

### 1.1 Product identifier

| | |
|---|---|
| Identification of the substance | **Chlorobenzene-d5** |
| Registration number (REACH) | this information is not available |
| CAS number | 3114-55-4 |
| Alternative name(s) | chlorobenzene-d5 |

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

Relevant identified uses: general use

### 1.3 Details of the supplier of the safety data sheet

Zeochem AG
Joweid 5, CH-8630 Rüti
Switzerland

Telephone: +41 44 922 93 93
e-Mail: info@zeochem.com / info@zeochem.ch
Website: https://www.zeochem.com

### 1.4 Emergency telephone number

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

| Section | Hazard class | Category | Hazard class and category | Hazard statement |
|---|---|---|---|---|
| 2.6 | flammable liquid | 3 | Flam. Liq. 3 | H226 |
| 3.1I | acute toxicity (inhal.) | 4 | Acute Tox. 4 | H332 |
| 3.2 | skin corrosion/irritation | 2 | Skin Irrit. 2 | H315 |
| 4.1A | hazardous to the aquatic environment - acute hazard | 1 | Aquatic Acute 1 | H400 |
| 4.1C | hazardous to the aquatic environment - chronic hazard | 2 | Aquatic Chronic 2 | H411 |

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources. Spillage and fire water can cause pollution of watercourses.

### 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

- Signal word: warning

2.2.1.2 Pictograms

| | |
|---|---|
| GHS02, GHS07, GHS09 |  |

| Hazard statements | |
|---|---|
| H226 | flammable liquid and vapour |
| H315 | causes skin irritation |
| H332 | harmful if inhaled |
| H410 | very 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 dust/fume/gas/mist/vapours/spray |
| P273 | avoid release to the environment |
| P280 | wear protective gloves/protective clothing/eye protection/face protection/hearing protection |
| P312 | call a POISON CENTRE/doctor if you feel unwell |
| P370+P378 | in case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish |
| P391 | collect spillage |
| P403+P235 | store in a well-ventilated place. Keep cool |
| P501 | dispose of contents/container in accordance with local/regional/national/international regulations |

### 2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Name of substance: Chlorobenzene-d5

Identifiers

CAS No: 3114-55-4

EC No: 221-458-0

| Specific Conc. Limits | M-Factors | ATE | Exposure route |
|---|---|---|---|
| - | - | 11 $^{mg}/_{l}$/4h | inhalation: vapour |

Molecular formula: C6D5Cl

Molar mass: 118 $^{g}/_{mol}$

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

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

Symptoms and effects are not known to date.

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

none

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO2)

Unsuitable extinguishing media

Water jet

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

In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO2), Hydrogen chloride (HCl)

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

## SECTION 6: Accidental release measures

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

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

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

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Recommendations

Store in a dry place.

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Avoidance of ignition sources. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Use only in well-ventilated areas. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools.

- Specific notes/details

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapours are heavier than air, spread along floors and form explosive mixtures with air. Vapours may form explosive mixtures with air.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

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

Managing of associated risks

- Explosive atmospheres

Keep container tightly closed and in a well-ventilated place. Use local and general ventilation. Keep cool. Protect from sunlight.

- Flammability hazards

Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Protect from sunlight.

- Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted. Use local and general ventilation. Ground/bond container and receiving equipment.

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

### 7.3 Specific end use(s)

See section 16 for a general overview.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

| Country | Name of agent | CAS No | Identifier | TWA [ppm] | TWA [mg/m³] | STEL [ppm] | STEL [mg/m³] | Ceiling-C [ppm] | Ceiling-C [mg/m³] | Notation | Source |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DE | chlorobenzene | 108-90-7 | MAK | 5 | 23 | 10 | 46 | | | | DFG |
| DE | chlorobenzene | 108-90-7 | AGW | 5 | 23 | 10 | 46 | | | Y | TRGS 900 |
| ES | chlorobenzene | 108-90-7 | VLA | 5 | 23 | 15 | 70 | | | | INSHT |
| EU | chlorobenzene | 108-90-7 | IOELV | 5 | 23 | 15 | 70 | | | | 2006/15/EC |
| FR | chlorobenzene | 108-90-7 | VME | 5 | 23 | 15 | 70 | | | | INRS |
| IT | monochlorobenzene | 108-90-7 | VLEP | 5 | 23 | 15 | 70 | | | | G.U. n. 218 - Allegato XXXVIII |

Notation

| | |
|---|---|
| Ceiling-C | ceiling value is a limit value above which exposure should not occur |
| STEL | short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified) |
| TWA | time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified) |
| Y | a risk of developmental toxicity does not need to be expected if the occupational exposure limit value and the biological limit value (BGW) are adhered to |

Biological limit values

| Country | Name of agent | Parameter | Notation | Identifier | Value | Source |
|---|---|---|---|---|---|---|
| DE | chlorobenzene | 4-chlorocatechol | hydr, crea | BAT | 80 mg/g | DFG |
| DE | chlorobenzene | 4-chlorocatechol | hydr, crea | BLV | 80 mg/g | TRGS 903 |

Notation

crea creatinine
hydr hydrolysis

### 8.2 Exposure controls

#### Appropriate engineering controls

General ventilation.

#### Individual protection measures (personal protective equipment)

#### Eye/face protection

Wear eye/face protection.

#### Skin protection

#### - Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

#### - Type of material

Nitrile
IIR: isobutene-isoprene (butyl) rubber

#### - Breakthrough times of the glove material

>30 minutes (permeation: level 2)

#### - Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

#### Respiratory protection

In case of inadequate ventilation wear respiratory protection.

#### Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Physical state | liquid |
| Colour | colourless |
| Odour | characteristic |
| Melting point/freezing point | -46 °C |
| Boiling point or initial boiling point and boiling range | ≥131 – ≤132 °C at 1,013 hPa |
| Flammability | flammable liquid in accordance with GHS criteria |
| Lower and upper explosion limit | not determined |
| Flash point | 28 °C (closed cup) |
| Auto-ignition temperature | 590 °C (ECHA) (auto-ignition temperature (liquids and gases)) |
| Decomposition temperature | not relevant |
| pH (value) | not determined |
| Kinematic viscosity | 0.652 $^{mm^2}/_{s}$ at 20 °C |

Solubility(ies)

| | |
|---|---|
| Water solubility | 0.207 $^{g}/_{l}$ at 20 °C |

Partition coefficient

| | |
|---|---|
| Partition coefficient n-octanol/water (log value) | 2.86 (ECHA) |
| Soil organic carbon/water (log KOC) | 2.4 (ECHA) |

| | |
|---|---|
| Vapour pressure | 11.7 hPa at 20 °C |

Density and/or relative density

| | |
|---|---|
| Density | 1.16 $^{g}/_{cm^3}$ at 20 °C |
| Relative vapour density | information on this property is not available |

| | |
|---|---|
| Particle characteristics | not relevant (liquid) |

### 9.2 Other information

| | |
|---|---|
| Information with regard to physical hazard classes | there is no additional information |

Other safety characteristics

| | |
|---|---|
| Surface tension | 33.9 $^{mN}/_{m}$ (15 °C) (ECHA) |
| Refractive index | 1.52 (20 °C) |
| Temperature class (EU, acc. to ATEX) | T1 (maximum permissible surface temperature on the equipment: 450°C) |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". It's a reactive substance. The mixture contains reactive substance(s). Risk of ignition.

If heated:

Risk of ignition

### 10.2 Chemical stability

See below "Conditions to avoid".

### 10.3 Possibility of hazardous reactions

No known hazardous reactions.

### 10.4 Conditions to avoid

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

Hints to prevent fire or explosion

Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

### 10.5 Incompatible materials

Oxidisers

### 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

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

**Classification according to GHS (1272/2008/EC, CLP)**

Acute toxicity

Harmful if inhaled.

GHS of the United Nations, annex 4: May be harmful if swallowed.

- Acute toxicity estimate (ATE)
Inhalation: vapour 11 $^{mg}/_{l}$/4h

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

### 11.2 Information on other hazards

There is no additional information.

## SECTION 12: Ecological information

### 12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

| Aquatic toxicity (acute) | | | |
|---|---|---|---|
| **Endpoint** | **Value** | **Species** | **Exposure time** |
| LC50 | 4.5 $^{mg}/_{l}$ | fish | 96 h |
| EC50 | 0.59 $^{mg}/_{l}$ | aquatic invertebrates | 48 h |
| ErC50 | 11.4 $^{mg}/_{l}$ | algae | 72 h |

| Aquatic toxicity (chronic) | | | |
|---|---|---|---|
| **Endpoint** | **Value** | **Species** | **Exposure time** |
| EC50 | 10.3 $^{mg}/_{l}$ | fish | 28 d |
| EbC50 | 3.4 $^{mg}/_{l}$ | aquatic invertebrates | 16 d |

## 12.2 Persistence and degradability

| Process of degradability | | |
|---|---|---|
| **Process** | **Degradation rate** | **Time** |
| oxygen depletion | 15 % | 28 d |

## 12.3 Bioaccumulative potential

Data are not available.

| | |
|---|---|
| n-octanol/water (log KOW) | 2.86 (ECHA) |
| BCF | 3.9 – 23 (ECHA) |

## 12.4 Mobility in soil

| | |
|---|---|
| The Organic Carbon normalised adsorption coefficient | 2.4 (ECHA) |

## 12.5 Results of PBT and vPvB assessment

Data are not available.

## 12.6 Endocrine disrupting properties

Not listed.

## 12.7 Other adverse effects

Data are not available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Waste treatment-relevant information

Solvent reclamation/regeneration.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

**Remarks**

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

## SECTION 14: Transport information

### 14.1 UN number or ID number

| | |
|---|---|
| ADR/RID/ADN | UN 1134 |
| IMDG-Code | UN 1134 |
| ICAO-TI | UN 1134 |

### 14.2 UN proper shipping name

| | |
|---|---|
| ADR/RID/ADN | CHLOROBENZENE |
| IMDG-Code | CHLOROBENZENE |
| ICAO-TI | Chlorobenzene |

### 14.3 Transport hazard class(es)

| | |
|---|---|
| ADR/RID/ADN | 3 |
| IMDG-Code | 3 |
| ICAO-TI | 3 |

### 14.4 Packing group

| | |
|---|---|
| ADR/RID/ADN | III |
| IMDG-Code | III |
| ICAO-TI | III |

### 14.5 Environmental hazards

hazardous to the aquatic environment

### 14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

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

The cargo is not intended to be carried in bulk.

## Information for each of the UN Model Regulations

### Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information

| | |
|---|---|
| Classification code | F1 |
| Danger label(s) | 3, fish and tree |

| | |
|---|---|
| Environmental hazards | yes (hazardous to the aquatic environment) |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 L |
| Transport category (TC) | 3 |
| Tunnel restriction code (TRC) | D/E |
| Hazard identification No | 30 |

### International Maritime Dangerous Goods Code (IMDG) - Additional information

| | |
|---|---|
| Marine pollutant | yes (hazardous to the aquatic environment) |
| Danger label(s) | 3, fish and tree |

| | |
|---|---|
| Special provisions (SP) | - |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 L |
| EmS | F-E, S-D |
| Stowage category | A |
| Segregation group | 10 - Liquid halogenated hydrocarbons |

### International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

| | |
|---|---|
| Environmental hazards | yes (hazardous to the aquatic environment) |
| Danger label(s) | 3 |

| | |
|---|---|
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 10 L |

## SECTION 15: Regulatory information

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

**Relevant provisions of the European Union (EU)**

**Restrictions according to REACH, Annex XVII**

Dangerous substances with restrictions (REACH, Annex XVII)

| Name of substance | Name acc. to inventory | CAS No | No |
|---|---|---|---|
| Chlorobenzene-d5 | this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC | | 3 |
| Chlorobenzene-d5 | flammable / pyrophoric | | 40 |
| Chlorobenzene-d5 | substances in tattoo inks and permanent make-up | | 75 |

**List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list**

not listed

**Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)**

not listed

**Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)**

not listed

**Water Framework Directive (WFD)**

List of pollutants (WFD)

| Name of substance | CAS No | Listed in | Remarks |
|---|---|---|---|
| Chlorobenzene-d5 | | a) | |

Legend
A) Indicative list of the main pollutants

**Regulation on persistent organic pollutants (POP)**

Not listed.

**National inventories**

| Country | Inventory | Status |
|---|---|---|
| EU | REACH Reg. | substance is listed |
| US | TSCA | substance is listed |

Legend
REACH Reg. REACH registered substances
TSCA Toxic Substance Control Act

### 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

## SECTION 16: Other information

### Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

### List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|---|---|
| H226 | Flammable liquid and vapour. |
| H315 | Causes skin irritation. |
| H332 | Harmful if inhaled. |
| H400 | Very toxic to aquatic life. |
| H411 | Toxic to aquatic life with long lasting effects. |

### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.