

## Chemical Safety Data Sheet MSDS / SDS

## 4-Chlorobenzaldehyde

Revision Date:2026-01-17 Revision Number:1

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

## Product identifier

Product name : 4-Chlorobenzaldehyde  
CBnumber : CB2316334  
CAS : 104-88-1  
EINECS Number : 203-247-4  
Synonyms : 4-chlorobenzaldehyde, aqueous ammonia

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Warning

## Precautionary statements

P501 Dispose of contents/container to....

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

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P273 Avoid release to the environment.

P270 Do not eat, drink or smoke when using this product.

P264 Wash skin thoroughly after handling.

P264 Wash hands thoroughly after handling.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

## Hazard statements

H411 Toxic to aquatic life with long lasting effects

H401 Toxic to aquatic life

H335 May cause respiratory irritation

H319 Causes serious eye irritation

H315 Causes skin irritation

H302 Harmful if swallowed

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## SECTION 3: Composition/information on ingredients

### Substance

|              |   |
|--------------|---|
| Product name | : 4-Chlorobenzaldehyde                  |
| Synonyms     | : 4-chlorobenzaldehyde, aqueous ammonia |
| CAS          | : 104-88-1                              |
| EC number    | : 203-247-4                             |
| MF           | : C <sub>7</sub> H <sub>5</sub> ClO     |
| MW           | : 140.57                                |

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## SECTION 4: First aid measures

### Description of first aid measures

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### Special hazards arising from the substance or mixture

Carbon oxides Hydrogen chloride gas Combustible.

Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

### Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### Further information

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### NFPA 704

2  
1 0

☒ HEALTH 1 Exposure would cause irritation with only minor residual injury (e.g. [acetone](#), sodium bromate, potassium chloride)

Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur and multiple finely

☒ FIRE 2 divided suspended solids that do not require heating before ignition can occur. Flash point between 37.8 and 93.3 °C (100 and 200 °F). (e.g. diesel fuel, [sulfur](#))

☒ REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N<sub>2</sub>](#))

☐ SPEC.

☐ HAZ.

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### Environmental precautions

Do not let product enter drains.

## Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

## Reference to other sections

For disposal see section 13.

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# SECTION 7: Handling and storage

## Precautions for safe handling

## Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

## Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

## Conditions for safe storage, including any incompatibilities

## Storage conditions

Tightly closed. Dry.

Handle and store under inert gas. Air sensitive.

## Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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# SECTION 8: Exposure controls/personal protection

## control parameter

## Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

## Exposure controls

## Personal protective equipment

### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: butyl-rubber

Minimum layer thickness: 0,7 mm Break through time: 480 min Material tested: Butoject? (KCL 898)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0,7 mm Break through time: 480 min Material tested: Butoject? (KCL 898)

### Body Protection

Flame retardant antistatic protective clothing.

### Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type P2

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

|  |   |
|--|---|
| Appearance                                   | solid   |
| Odour  | stinging  |
| Odour Threshold                              | No data available   |
| pH   | No data available   |
| Melting point/freezing point                 | Melting point/range: 45 - 50 °C - lit.  |
| Initial boiling point and boiling range      | 213 - 214 °C - lit.   |
| Flash point                                  | 92 °C - closed cup - DIN 51758  |
| Evaporation rate                             | No data available   |
| Flammability (solid, gas)                    | No data available   |
| Upper/lower flammability or explosive limits | No data available   |
| Vapour pressure                              | 0,9 hPa at 20 °C 4,5 hPa at 50 °C   |
| Vapour density                               | 0.6 (vs air)  |
| Relative density                             | 1,19 g/cm <sup>3</sup> at 60 °C   |
| Water solubility                             | 919 g/l at 20 °C  |
| Partition coefficient: n-octanol/water       | log Pow: 2,34 at 25 °C - Bioaccumulation is not expected.                     |
| Autoignition temperature                     | No data available   |
| Decomposition temperature                    | No data available   |
| Viscosity                                    | Viscosity, kinematic: No data available Viscosity, dynamic: No data available |

Explosive properties                      No data available

Oxidizing properties                      No data available

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### Other safety information

No data available

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## SECTION 10: Stability and reactivity

### Reactivity

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions

Violent reactions possible with:

Iron

Strong bases

Strong oxidizing agents strong reducing agents

### Conditions to avoid

Strong heating.

### Incompatible materials

No data available

### Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male - 840 mg/kg

(OECD Test Guideline 401)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

LC50 Inhalation - Rat - male and female - 4 h - > 0,241 mg/l (OECD Test Guideline 403)

Remarks:

(highest concentration to be prepared)

LD50 Dermal - Rat - male and female - > 5.000 mg/kg (OECD Test Guideline 402)

#### **Skin corrosion/irritation**

Skin - Rabbit

Result: Severe skin irritation - 24 h Remarks:

(ECHA)

#### **Serious eye damage/eye irritation**

Eyes - Rabbit Result: irritating

(OECD Test Guideline 405)

#### **Respiratory or skin sensitization**

(OECD Test Guideline 429) Remarks:

The value is given in analogy to the following substances: o-Chlorobenzaldehyde

#### **Germ cell mutagenicity**

Ames test

Salmonella typhimurium Result: negative

#### **Carcinogenicity**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### **Reproductive toxicity**

##### **Specific target organ toxicity - single exposure**

Acute oral toxicity - Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

##### **Specific target organ toxicity - repeated exposure Aspiration hazard**

#### **Toxicity**

LD50 orally in Rabbit: 840 mg/kg LD50 dermal Rat 5000 mg/kg

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## SECTION 12: Ecological information

#### **Toxicity**

##### **Toxicity to fish**

semi-static test LC50 - Pimephales promelas (fathead minnow) - 2,2 mg/l - 96 h

(OECD Test Guideline 203)

##### **Toxicity to algae**

static test ErC50 - Desmodesmus subspicatus (green algae) - 15,8 mg/l - 72 h

(OECD Test Guideline 201)

##### **Toxicity to bacteria**

Remarks: (External MSDS)

(4-chlorobenzaldehyde)

#### **Persistence and degradability**

Biodegradability aerobic - Exposure time 28 d

Result: 99 % - Inherently biodegradable. (OECD Test Guideline 302B)

aerobic - Exposure time 20 d

Result: 0 % - Not readily biodegradable. (OECD Test Guideline 301D)

## **Bioaccumulative potential**

## **Mobility in soil**

## **Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## **Other adverse effects**

Discharge into the environment must be avoided.

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# **SECTION 13: Disposal considerations**

## **Waste treatment methods**

## **Product**

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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# **SECTION 14: Transport information**

## **UN number**

ADR/RID: - IMDG: - IATA: -

## **UN proper shipping name**

ADR/RID: Not dangerous goods IMDG: Not dangerous goods IATA: Not dangerous goods

## **Transport hazard class(es)**

ADR/RID: - IMDG: - IATA: -

## **Packaging group**

ADR/RID: - IMDG: - IATA: -

## **Environmental hazards**

ADR/RID: no IMDG Marine pollutant: no IATA: no

## **Special precautions for user**

## **Further information**

Not classified as dangerous in the meaning of transport regulations.

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# **SECTION 15: Regulatory information**



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

### Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Not Listed. website: <https://www.mem.gov.cn/>

### Measures for Environmental Management of New Chemical Substances

Vietnam National Chemical Inventory:Listed. website: <https://chemicaldata.gov.vn/>

Korea Existing Chemicals List (KECL):Listed. website: <http://ncis.nier.go.kr>

New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: <https://echa.europa.eu/>

EC Inventory:Listed.

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: <https://www.epa.gov/>

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: <https://www.mee.gov.cn/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: <https://emb.gov.ph/>

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## SECTION 16: Other information

### Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

### References

【1】CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

【2】ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

【3】ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

【4】eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:

[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

【5】ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

【6】Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

【7】HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

【8】IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

【9】IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

【10】Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability

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