

## Chemical Safety Data Sheet MSDS / SDS

## CARBON MONOXIDE

Revision Date:2024-12-21 Revision Number:1

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

## Product identifier

Product name : CARBON MONOXIDE  
CBnumber : CB1300110  
CAS : 630-08-0  
EINECS Number : 211-128-3  
Synonyms : CO,Carbon Monoxide

## 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 : 400-158-6606

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## Precautionary statements

P201 Obtain special instructions before use.  
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P311 Call a POISON CENTER or doctor/physician.  
P410+P403 Protect from sunlight. Store in a well-ventilated place.

## Hazard statements

H220 Extremely flammable gas  
H280 Contains gas under pressure; may explode if heated  
H331 Toxic if inhaled  
H372 Causes damage to organs through prolonged or repeated exposure

## Disposal

WARNING.Cancer - <https://oehha.ca.gov/proposition-65/chemicals/carbon-monoxide>

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## SECTION 3: Composition/information on ingredients

### Substance

Product name	: CARBON MONOXIDE
Synonyms	: CO,Carbon Monoxide
CAS	: 630-08-0
EC number	: 211-128-3
MF	: CO
MW	: 28.01

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## SECTION 4: First aid measures

### Description of first aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor

#### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

#### 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

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Unsuitable extinguishing media

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

### Special hazards arising from the substance or mixture

Carbon oxides Not combustible.

Pay attention to flashback.

Ambient fire may liberate hazardous vapours.

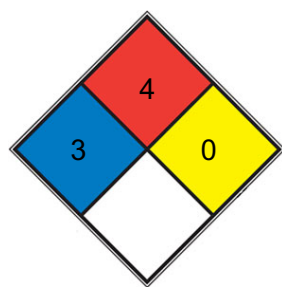
### Advice for firefighters

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. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### NFPA 704



**HEALTH** 3 Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

**FIRE** 4 Will rapidly or completely vaporize at normal atmospheric pressure and temperature, or is readily dispersed in air and will burn readily. Includes pyrophoric substances. Flash point below room temperature at 22.8 °C (73 °F). (e.g. acetylene, propane, [hydrogen gas](#))

**REACT** 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N2](#))

☐ SPEC.

☐ HAZ.

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe gas. Avoid substance contact. Ensure adequate ventilation. 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). Stop flow of gas, move leaking cylinder to open air if without risk.

## Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### Precautions for safe handling

#### Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### 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. Keep locked up or in an area accessible only to qualified or authorized persons. Keep away from combustible materials and sources of ignition.

Contents under pressure.

#### 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

##### Body Protection

Flame retardant antistatic protective clothing.

##### Respiratory protection

required when vapours/mists 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 ABEK

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.

#### Exposure limits

TLV-TWA 50 ppm ( $\sim 55 \text{ mg/m}^3$ ) (ACGIH, MSHA, and OSHA); STEL 400 ppm (ACGIH); IDLH 1500 ppm (NIOSH).

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Appearance	colorless Compressed gas
Odour	odorless
Odour Threshold	Not applicable
pH	No data available
Melting point/freezing point	Melting point/range: $-205 \text{ }^\circ\text{C}$ - lit.
Initial boiling point and boiling range	$-191,5 \text{ }^\circ\text{C}$ - lit.
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Upper explosion limit: 74 %(V) Lower explosion limit: 12,5 %(V)
Vapour pressure	$>760 \text{ mmHg}$ at $20 \text{ }^\circ\text{C}$
Vapour density	0,97 - (Air = 1.0)
Relative density	No data available No data available
Water solubility	At $20 \text{ }^\circ\text{C}$ and at a pressure of 101 kPa, 2.266 volumes of carbon monoxide dissolve in 100 volumes of water.
Partition coefficient: n-octanol/water	No data available
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

### Other safety information

Relative vapor density

0,97 - (Air = 1.0)

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## SECTION 10: Stability and reactivity

### Reactivity

No data available

## Chemical stability

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

## Possibility of hazardous reactions

No data available

## Conditions to avoid

no information available

## Incompatible materials

Sodium/sodium oxides, Potassium, Strong oxidizing agents

## 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

Oral

LC50 Inhalation - Rat - male - 4 h - 1300 ppm (OECD Test Guideline 403)

Dermal

### Skin corrosion/irritation

No data available

### Serious eye damage/eye irritation

No data available

### Respiratory or skin sensitization

No data available

### Germ cell mutagenicity

No data available

### Carcinogenicity

No data available

### Reproductive toxicity

May damage the unborn child. Positive evidence from human epidemiological studies.

### Specific target organ toxicity - single exposure

No data available

### Specific target organ toxicity - repeated exposure

Inhalation - Causes damage to organs through prolonged or repeated exposure.

No data available

### Toxicity

LC50 inhal (rat) 1807 ppm (2065 mg/m<sup>3</sup>; 4 h)

LCLO inhal (man) 4000 ppm (4570 mg/m<sup>3</sup>; 30 min)

PEL (OSHA) 50 ppm (55 mg/m<sup>3</sup>)

## SECTION 12: Ecological information

### Toxicity

No data available

### Persistence and degradability

No data available

### Bioaccumulative potential

No data available

### Mobility in soil

No data available

### 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

No data available

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## SECTION 13: Disposal considerations

### Waste treatment methods

#### Incompatibilities

Forms extremely explosive mixture with air. Incompatible with oxidizers; contact may cause fires or explosions. Keep away from alkaline materials, strong bases, strong acids, oxoacids, epoxides. In the presence of finely dispersed metal powders the substance forms toxic and flammable carbonyls. May react vigorously with oxygen, acetylene, chlorine, fluorine, nitrous oxide.

### Product

Pressurised gas bottle: dispose of only in empty condition! 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.

### Waste Disposal

Return refillable compressed gas cylinders to supplier. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. All federal, state, and local environmental regulations must be observed. Carbon monoxide can also be recovered from gas mixtures as an alternative to disposal.

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## SECTION 14: Transport information

### UN number

ADR/RID: 1016 IMDG: 1016 IATA: 1016

## UN proper shipping name

ADR/RID: CARBON MONOXIDE, COMPRESSED IMDG:  
CARBON MONOXIDE, COMPRESSED

IATA: Carbon monoxide, compressed Passenger Aircraft: Not permitted for  
transport Cargo Aircraft: Not permitted for transport

14.3	Transport hazard class(es) ADR/RID: 2.3 (2.1) IMDG: 2.3 (2.1)	IATA: 2.3 (2.1)
14.4	Packaging group ADR/RID: - IMDG: -	IATA: -
14.5	Environmental hazards ADR/RID: no IMDG Marine pollutant: no	IATA: no
14.6	Special precautions for user No data available	

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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: Listed. website: <https://www.mem.gov.cn/>

#### Measures for Environmental Management of New Chemical Substances

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

EC Inventory: Listed.

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

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/>

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

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

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

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## SECTION 16: Other information

### Abbreviations and acronyms

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

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%



LD50: Lethal Dose 50%

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

STEL: Short term exposure limit

TWA: Time Weighted Average

## 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/>

## Other Information

Carbon monoxide is a product of incomplete combustion of coal, oil, wood. It is present in vehicle exhaust and tobacco smoke. Depending on the degree of exposure, periodic medical examination is suggested. There is no odour warning even when toxic concentrations are present. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.

### 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 of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.