

# Carbon Monoxide

## (Bulk Trailers)

### 1 IDENTIFICATION OF THE SUBSTANCE/ PREPARATION AND OF THE COMPANY

Product name	Carbon monoxide
Chemical formula	CO
Company identification	BOC India Limited P-43 Tartala Road Kolkata West Bengal India 700088
Emergency phone Nos	(033) 24014708-20 Customer care No: 1800 345 6789

### 2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/ Preparation	Substance
Components/ Impurities	Contains no other components or impurities which will influence the classification of the product.

CAS Nr 630-08-0

### 3 HAZARDS IDENTIFICATION

Hazards identification Extremely flammable. Toxic by inhalation. May cause harm to unborn child. Compressed gas.

### 4 FIRST AID MEASURES

Inhalation	Toxic by inhalation. Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped. Delayed adverse effects possible.
Ingestion	Ingestion is not considered a potential route of exposure.

### 5 FIRE FIGHTING MEASURES

Specific hazards	Exposure to fire may cause containers to rupture/explode.
Hazardous combustion products	None that are more toxic than the product itself.
Suitable extinguishing media	All known extinguishants can be used.
Specific methods	If possible, stop flow of product. Move away from the container and cool with water from a protected position. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.
Special protective equipment for fire fighters	Use self-contained breathing apparatus.

### 6 ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate area. Eliminate ignition sources. Ensure adequate air ventilation. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Environmental precautions	Try to stop release.
Clean up methods	Ventilate area.

### 7 HANDLING AND STORAGE

Handling and storage	Ensure equipment is adequately earthed. Suck back of water into the container must be prevented. Purge air from system before introducing gas. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Keep away from ignition sources (including static discharges). Segregate from oxidant gases and other oxidants in store. Refer to supplier's container handling instructions. Keep container below 50 °C in a well ventilated place.
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### 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value for country	Carbon monoxide LTEL: 30ppm
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Personal protection	Ensure adequate ventilation. Do not smoke while handling product. Keep self-contained breathing apparatus readily available for emergency use.
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### 9 PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight	28
Melting point	-205 °C
Boiling point	-192 °C
Critical temperature	-140 °C
Relative density, gas	1 (air=1)
Relative density, liquid	Not applicable.
Solubility mg/l water	30 mg/l
Appearance/Colour	Colourless gas
Odour	No odour warning properties
Autoignition temperature	620 °C
Flammability range	12.5-74 vol% in air

# SAFETY DATA SHEET

## 10 STABILITY AND REACTIVITY

Stability and reactivity      Can form explosive mixture with reactivity air. May react violently with oxidants.

## 11 TOXICOLOGICAL INFORMATION

General      Damage to red blood cells (haemolytic poison). May impair fertility and cause harm to the unborn child. Delayed adverse effects possible.

LC50/1h (ppm)      3760ppm

## 12 ECOLOGICAL INFORMATION

General      No known ecological damage caused by this product.

## 13 DISPOSAL CONSIDERATIONS

General      Avoid discharge to atmosphere. Do not discharge into any place where its accumulation could be dangerous. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Contact supplier if guidance is required.

## 14 TRANSPORT INFORMATION

Proper Shipping Name      Carbon Monoxide, Compressed

UN Nr      1016

Class/Div      2.3

Subsidiary risk      2.1

ADR/RID      1TF

Classification Code

ADR/RID Hazard Nr      263

Labelling ADR      Label 2.1: flammable gas.  
Label 2.3: toxic substance.

Other transport information      Avoid transport on vehicles where the load space is not separated from the driver's compartment.

Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.

Before transporting product containers ensure that they are firmly secured and:

- cylinder valve is closed and not leaking
- valve outlet cap nut or plug (where provided) is correctly fitted
- valve protection device (where provided) is correctly fitted
- there is adequate ventilation
- compliance with applicable regulations.

## 15 REGULATORY INFORMATION

Number in Annex 1 of Dir 67/548      006-001-00-2.

EC Classification      F+; R12|Repr.Cat.1; R61|T; R23-48/23

- Symbols      F+: Extremely flammable  
T: Toxic

Labelling of cylinders - Symbols      Label 2.1: flammable gas.  
Label 2.3: toxic substance.

- Risk phrases      R12 Extremely flammable.

R23 Toxic by inhalation.

R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

R61 May cause harm to the unborn child.

- Safety phrases      S9 Keep container in well ventilated place.

S16 Keep away from ignition sources - No smoking.

S33 Take precautionary measures against static discharges.

S36 Wear suitable protective clothing.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S53 Avoid exposure, obtain special instructions before use.

## 16 OTHER INFORMATION

Ensure all national/local regulations are observed.

Ensure operators understand the flammability hazard. Users of breathing apparatus must be trained. Ensure operators understand the toxicity hazard.

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

### Product Specification

Carbon Monoxide	98.7% by volume
Nitrogen	< 8000 vpm
Oxygen	< 100 vpm
Hydrogen	< 3,500 vpm
Methane	< 400 vpm
Water	< 10 vpm



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For product and safety enquiries please phone

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