



## Gas safety data sheet

### 1. Identification of the substance/preparation and of the company

<b>Product name</b>	Carbon Dioxide
<b>Chemical formula</b>	CO <sub>2</sub>
<b>Company identification</b>	BOC, Priestley Road, Worsley, Manchester M28 2UT
<b>Emergency phone number</b>	08457 302 302

### 2. Composition/information on ingredients

<b>Substance/Preparation</b>	Substance
<b>Components/Impurities</b>	Contains no other components or impurities which will influence the classification of the product.
<b>CAS Nr</b>	00124-38-9
<b>EEC Nr (from EINECS)</b>	2046969

### 3. Hazards identification

<b>Hazards identification</b>	Liquefied gas. In high concentrations may cause asphyxiation.
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### 4. First aid measures

<b>Inhalation</b>	Low concentrations of CO <sub>2</sub> cause increased respiration and headache. In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stops.
<b>Skin/eye contact</b>	Immediately flush eyes thoroughly with water for at least 15 minutes. In case of cold burn spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.
<b>Ingestion</b>	Ingestion is not considered a potential route of exposure.

### 5. Fire fighting measures

<b>Specific hazards</b>	Exposure to fire may cause cylinders to rupture/explode. Non-flammable.
<b>Hazardous combustion products</b>	None.
<b>Suitable extinguishing media</b>	All known extinguishants can be used.
<b>Specific methods</b>	If possible, stop flow of product. Move cylinder away or cool with water from a protected position.
<b>Special protective equipment for fire fighters</b>	In a confined space use self-contained breathing apparatus.

### 6. Accidental release measures

<b>Personal precautions</b>	Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe, i.e. oxygen concentration is 21% +/- 2% and CO <sub>2</sub> concentration is less than 1.5%. Ensure adequate air ventilation.
<b>Small release</b>	For a leaking cylinder, try to stop release by closing the valve if safe to do so.
<b>Major release (e.g. bursting disc activation)</b>	Evacuate the area immediately. Cylinder bursting disc activation will be evident by a sudden noise accompanied by a prolonged discharge of product seen as a white vapour. Frost may be seen on the cylinder. The cylinder should be left to discharge and BOC contacted.
<b>Environmental Precautions</b>	Prevent from entering low lying areas where its accumulation can be dangerous, e.g. cellars.
<b>Clean up methods</b>	Ventilate area.

### 7. Handling and storage

<b>Handling and storage</b>	Cylinders should be secure when stored or in use. Only use cylinders when in an upright position. Suck back of water into the cylinder must be prevented. Do not allow backfeed into the cylinder. When cylinder valves have been exposed to flooding in cellars, the cylinder must not be used and BOC notified for collection. Do not store cylinders adjacent to direct heat sources or within sealed rooms where ambient heat may build up. Keep cylinder below 50°C. Failure to do so may cause the bursting disc to rupture (see 6, Major Release above). Store in a well ventilated place, and if this is not possible conduct a confined space risk assessment. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Only open the cylinder valve when connected to equipment. Open and close valve slowly. Close cylinder valve when not in use.
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### 8. Exposure controls/personal protection

<b>Exposure limits Great Britain</b>	Carbon Dioxide Occupational Exposure Standard (OES) Short Term Exposure Limit (STEL) 15000vpm Long Term Exposure Limit (LTEL) 5000vpm (EH 40/2002)
<b>Personal protection</b>	Ensure adequate ventilation to keep below exposure limits.

## 9. Physical and chemical properties

<b>Molecular weight</b>	44
<b>Melting point</b>	-56.6°C
<b>Boiling point</b>	-78.5(s)°C
<b>Critical temperature</b>	30°C
<b>Relative density, gas</b>	1.52 (air=1) Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.
<b>Relative density, liquid</b>	0.82 (water=1)
<b>Vapour pressure 20°C</b>	57.3 bar
<b>Solubility mg/l water</b>	2000 mg/l
<b>Appearance/Colour</b>	Colourless gas.
<b>Odour</b>	No odour warning properties.

## 10. Stability and reactivity

**Stability and reactivity** Stable under normal conditions.

## 11. Toxicological information

**General** Carbon Dioxide is mildly toxic, with no cumulative effects. High concentrations cause rapid circulatory insufficiency. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness.

## 12. Ecological information

**General** When discharged in large quantities may contribute to the greenhouse effect.

**Global warming factor** 1.

## 13. Disposal considerations

**General** Discharge to atmosphere in a well ventilated place. Do not discharge into any place where the gas may accumulate. Discharge to atmosphere in large quantities should be avoided. Contact BOC Gases if guidance is required.

## 14. Transport information

<b>UN Nr</b>	1013
<b>Class/Div</b>	2.2
<b>ADR/RID</b>	
<b>Classification Code</b>	2A
<b>ADR/RID Hazard Nr</b>	20

## Volume reference chart

Sureflow gas type	Gas cylinder	Maximum filled pressure (bar)	Cylinder size (cm)		Approx. cylinder weight (kg)	Nominal weight of gas (kg)	Gross weight cylinder + gas (kg)	Nominal gas volume (m <sup>3</sup> )
			Diameter	Height				
<b>SUREGAS</b> Food quality CO <sub>2</sub>	E	50	14.0	50.0	7	3.15	10.15	1.7
	B	50	14.0	83.0	15	6.35	21.35	3.4
	B	50	14.0	94.0	16	6.35	22.35	3.4
	SB	50	16.6	62.8	12	6.35	18.35	3.4
	SB	50	17.6	69.0	11	6.35	17.35	3.4
	P	50	14.0	150.0	24	12.70	36.70	6.8
	R	50	20.3	87.0	30	13.80	43.80	7.4
	K	50	23.0	149.5	65	34.00	99.00	18.2

**Notes:** The nominal volume of gas is measured at 15°C and 1013mb pressure. Actual contents, volume and weight can vary around the nominal figures indicated. Cylinder height includes a 10cm allowance for the cylinder valve and guard.

## Labelling ADR Other transport information

Label 2.2: non-flammable, non-toxic gas.  
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 cylinders ensure that they are firmly secured and:

- cylinder valve is closed and not leaking
- valve guard is correctly fitted
- there is adequate ventilation
- compliance with applicable regulations.

## 15. Regulatory information

**Number in Annex I of Dir 67/548** Not included in Annex I.

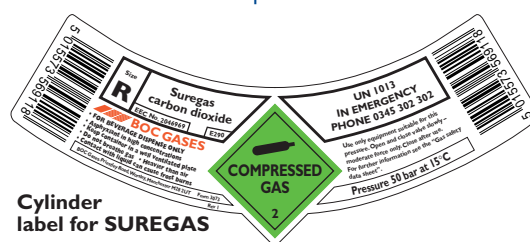
**EC Classification** Not classified as a dangerous substance.

## Labelling of cylinders

**- Symbols** Label 2.2: non-flammable non-toxic gas.

## 16. Other information

Ensure all national/local regulations are observed.  
Asphyxiant in high concentrations. Keep container in well ventilated place. Do not breathe the gas.  
The hazard of asphyxiation is often overlooked and must be stressed during operator training.  
Contact with liquid may cause burns/frost bite.  
Users of breathing apparatus must be trained.  
For beverage dispense only.  
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.



Cylinder label for SUREGAS