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# Safety advice.

# Compressed gases

Safety Data Sheet

CORGON® 10  
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Version: 01

## 1. PRODUCT AND COMPANY IDENTIFICATION

|                                  |  |
|----------------------------------|--|
| Trade Name                       | CORGON® 10   |
| UN-No                            | UN 1956  |
| Recommended Use                  | Gas Metal Arc Welding                                    |
| Manufacturer's Registered Office | Oxygen House,<br>P-43 Taratala Road,<br>Kolkata - 700088 |
| Telephone Number                 | (+9133) 66021600   |
| 24 Hour Emergency Contact No:    | (+91) 9831851034   |

Linde India Limited  
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## 2. HAZARDS IDENTIFICATION

## WARNING!

Appearance Colorless

## EMERGENCY OVERVIEW

Simple asphyxiant - this product does not contain oxygen and may cause suffocation if released in a confined area. Maintain oxygen levels above 19.5%

High pressure compressed gas  
Keep at temperatures below 52OC / 125OF

Physical State Compressed gas Odor Odorless

Potential Health Effects

Principal Routes of Exposure Inhalation.

## Acute Toxicity

## Inhalation

Simple asphyxiant. May cause suffocation by displacing the oxygen in the air. Exposure to an oxygen-deficient atmosphere (<19.5%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness, and death. Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.

Depending on concentration and duration of exposure to carbon dioxide may cause increased respiration, headache, mild narcotic effects, increased blood pressure and pulse, and asphyxiation. Symptoms of overexposure become more apparent when atmospheric oxygen is decreased to 15-17%.

Eyes None known. Contact with rapidly expanding gas near the point of release may cause severe harm.

Skin None known.

Skin Absorption Hazard No known hazard by skin absorption.

Ingestion Not an expected route of exposure.

Chronic Effects Chronic harmful effects are not known from repeated inhalation of concentrations below PEL/TLV.

Aggravated Medical Conditions Respiratory disorders.

Environmental Hazard See Section 12 for additional Ecological Information.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name  | CAS-No    | Volume % | Chemical Formula |
|----------------|-----------|----------|------------------|
| Argon          | 7440-37-1 | 90       | Ar               |
| Carbon dioxide | 124-38-9  | 10       | CO <sub>2</sub>  |

## 4. FIRST AID MEASURES

Eye Contact None under normal use. Get medical attention if symptoms occur.

Skin Contact None under normal use. Get medical attention if symptoms occur.

## Inhalation

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF INHALATION OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS(SCBA).

Conscious inhalation victims should be assisted to an uncontaminated area and inhale fresh air. If breathing is difficult, Administer oxygen under medical supervision / trained personnel supervision. Unconscious persons should be moved to an uncontaminated area and, as necessary, given artificial resuscitation and supplemental oxygen. Treatment should be symptomatic and supportive.

Ingestion None under normal use. Get medical attention if symptoms occur.

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## 5. FIRE-FIGHTING MEASURES

|   |   |
|---|---|
| Flammable Properties                                  | Not flammable. Does not support combustion.   |
| Suitable Extinguishing Media                          | Use extinguishing agent suitable for the type of surrounding fire.  |
| <u>Explosion Data</u>                                 |   |
| Sensitivity to Mechanical Impact                      | None  |
| Sensitivity to Static Discharge                       | None  |
| Specific Hazards Arising from the Chemical            | Cylinders may rupture under extreme heat. Continue to cool fire-exposed cylinders until flames are extinguished. Damaged cylinders should be handled only by specialists. |
| Protective Equipment and Precautions for Firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear.   |

## 6. ACCIDENTAL RELEASE MEASURES

|                           |   |
|---------------------------|---|
| Personal Precautions      | Ensure adequate ventilation. Evacuate personnel to safe areas. Use personal protective equipment. Monitor oxygen level.   |
| Environmental Precautions | Prevent the spreading of vapors through sewers, ventilation systems, and confined areas.  |
| Methods for Containment   | Stop the flow of gas or remove the cylinder to an outdoor location if this can be done without risk. If a leak is in the container or container valve, contact the appropriate emergency telephone number in Section 1 or call your closest Linde location. |
| Methods for Cleaning Up   | Return cylinder to Linde India Limited.   |
| Other Information         | Ventilate the area.   |

## 7. HANDLING AND STORAGE

|          |  |
|----------|--|
| Handling | Use only in ventilated areas. Never attempt to lift a cylinder by its valve protection cap.  |
|          | Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distances, use a trolley designed to transport cylinders. Use equipment rated for cylinder pressure. Use a backflow preventive device in the piping. Never insert an object (e.g., wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage the valve, causing a leak to occur.  |
|          | Close valve after each use and when empty. If a user experiences any difficulty operating the cylinder valve discontinue use and contact the supplier.   |
|          | Never put cylinders into trunks of cars or unventilated areas of passenger vehicles. Never attempt to refill a compressed gas cylinder without the owner's written consent. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit.   |
|          | For additional recommendations consult rule number 20 of the Gas Cylinders, Rules, 2016  |
| Storage  | Protect from physical damage. Cylinders should be stored upright with a valve protection cap in place and firmly secured to prevent falling. Store in a cool, dry, well-ventilated area of non-combustible construction away from high traffic areas and emergency exits. Keep at temperatures below 52°C / 125°F.<br>Full and empty cylinders should be segregated. Use a "First-In-First-Out" (FIFO) inventory system to prevent full cylinders from being stored for excessive periods of time. Always store and handle compressed gas cylinders in accordance with rule number 21 of the Gas Cylinders, Rules, 2016. |

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

## Exposure Guidelines

| Chemical Name              | ACGIH TLV                         | OSHA PEL   | NIOSH IDLH  |
|----------------------------|-----------------------------------|--|---|
| Carbon dioxide<br>124-38-9 | STEL = 30000 ppm<br>TWA: 5000 ppm | TWA: 5000 ppm TWA: 9000 mg/<br>m <sup>3</sup> (vacated) TWA: 10000 ppm<br>(vacated) TWA: 18000 mg/m <sup>3</sup><br>(vacated) STEL: 30000 ppm<br>(vacated) STEL: 54000 mg/m <sup>3</sup> | IDLH: 40000 ppm<br>TWA: 5000 ppm<br>TWA: 9000 mg/m <sup>3</sup><br>STEL: 54000 mg/m <sup>3</sup><br>STEL: 30000 ppm |

*Immediately Dangerous to Life or Health.*

|                                      |  |
|--------------------------------------|--|
| Other Exposure Guidelines            | Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).                                    |
| Engineering Measures                 | Local exhaust ventilation to prevent accumulation of high concentrations and maintain air-oxygen levels at or above 19.5%.                     |
| Ventilation                          | Use ventilation adequate to keep exposures below recommended exposure limits.  |
| <b>Personal Protective Equipment</b> |  |
| Eye/Face Protection                  | Wear protective eyewear (safety glasses).  |
| Skin and Body Protection             | Work gloves and safety shoes are recommended when handling cylinders.  |
| Respiratory Protection               |  |
| General Use                          | No respiratory equipment is needed if workplace oxygen levels are kept above 19.5%.  |
| Emergency Use                        | Use positive pressure airline respirator with escape cylinder or self-contained breathing apparatus for oxygen-deficient atmospheres (<19.5%). |
| Hygiene Measures                     | Handle in accordance with good industrial hygiene and safety practices.  |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

## Product Information

|                            |                           |                          |                           |
|----------------------------|---------------------------|--------------------------|---------------------------|
| Appearance                 | Colorless.                | Odor                     | Odorless.                 |
| Odor Threshold             | No information available. | Physical State           | Compressed gas            |
| Flash Point                | Not applicable.           | Autoignition Temperature | No information available. |
| Flammability Limits in Air |                           |                          |                           |
| Upper                      | Not applicable            |                          |                           |
| Lower                      | Not applicable            |                          |                           |

The following information is for the NON-INERT components of this mixture

| Chemical Name  | Boiling Point | Melting Point | Molecular Weight | Evaporation Rate | Water Solubility  | Vapor Pressure               | Vapor Density (Air=1) | Gas Density Kg/m <sup>3</sup> @20°C |
|----------------|---------------|---------------|------------------|------------------|-------------------|------------------------------|-----------------------|-------------------------------------|
| Carbon dioxide | 56°C          | -56°C         | 44.00            | -                | 0.145 g/ml @ 25°C | 838 psig (5778 kPa) @ 21.1°C | 1.52                  | 1.84                                |

The following information is for the INERT components that may be part of this mixture:

| Chemical Name | Boiling Point | Melting Point | Molecular | Evaporation Rate | Water Solubility               | Vapor Pressure             | Vapor Density (Air=1) | Gas Density Kg/m <sup>3</sup> @20°C |
|---------------|---------------|---------------|-----------|------------------|--------------------------------|----------------------------|-----------------------|-------------------------------------|
| Argon         | -185.9°C      | -189.4°C      | 39.94     | -                | 0.056 (vol/vol @ 0°C or 1 atm) | Above critical temperature | 1.38                  | 1.65                                |

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## 10. STABILITY AND REACTIVITY

|                                  |   |
|----------------------------------|---|
| Stability                        | Stable.   |
| Incompatible Products            | Carbon dioxide is incompatible with: Certain reactive metals, hydrides, moist cesium monoxide, or lithium acetylene carbide di ammino may ignite. Passing carbon dioxide over a mixture of sodium peroxide and aluminum or magnesium may explode. |
| Conditions to Avoid              | Due to the presence of Carbon dioxide, Carbonic acid is formed in the presence of moisture.   |
| Hazardous Decomposition Products | None known.   |
| Hazardous Polymerization         | Does not occur.   |

## 11. TOXICOLOGICAL INFORMATION

Acute Toxicity Product

## Information

|                  |                           |
|------------------|---------------------------|
| LD50 Oral:       | No information available. |
| LD50 Dermal:     | No information available. |
| LC50 Inhalation: | No information available. |

**Inhalation**

Acidosis, adrenal cortical exhaustion, and other metabolic stresses have resulted from prolonged continuous exposure to 1-2% carbon dioxide (10,000 ppm-20,000 ppm). The ACGIH TLV of 5,000 ppm is expected to provide a good margin of safety from asphyxiation and undue metabolic stress provided sufficient oxygen levels are maintained in the air. Increased physical activity, duration of exposure, and decreased oxygen content can affect systemic and respiratory effects resulting from exposure to carbon dioxide.

|                        |                           |
|------------------------|---------------------------|
| Repeated Dose Toxicity | No information available. |
| Component Information  | No information available. |

| Chemical Name  | LD50 Oral | LD50 Dermal | LC50 Inhalation  |
|----------------|-----------|-------------|------------------|
| Carbon dioxide | —         | —           | 470000 ppm (Rat) |

Toxicity

|                        |   |
|------------------------|---|
| Chronic Toxicity       | Chronic harmful effects are not known from repeated inhalation of concentrations below PEL/TLV.                 |
| Carcinogenicity        | Contains no ingredient listed as a carcinogen.  |
| Irritation             | No information available.   |
| Sensitization          | No information available.   |
| Reproductive           | No information available.   |
| Developmental Toxicity | Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals. |
| Synergistic Materials  | None known.   |
| Target Organ Effects   | Central vascular system (CVS), Respiratory system.  |

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## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

The environmental impact of this product has not been fully investigated.

Ozone depletion potential; ODP; (R-11 = 1): Does not contain ozone depleting chemical.

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Methods** Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to Linde India Limited for proper disposal.

**Contaminated Packaging** Do not re-use empty containers.

## 14. TRANSPORT INFORMATION

|                      |   |
|----------------------|---|
| Proper shipping name | Compressed gas, n.o.s.                                    |
| Hazard Class         | 2.2   |
| Subsidiary Class     | None  |
| UN-Number            | UN1956  |
| Description          | UN1956, Compressed gas, n.o.s.(Argon, Carbon Dioxide),2.2 |

## 15. Regulatory Information

|                       |  |
|-----------------------|--|
| Labeling of cylinders | : Label 2.2: non-flammable non-toxic gas.                                  |
| Risk phrases          | : RAs Asphyxiate in high concentrations.                                   |
| Safety phrases        | : S9 Keep container in a well-ventilated place.<br>S23 Do not breathe gas. |

## 16. Other Information



**General** Ensure all national/local regulations are observed.  
The hazard of asphyxiation is often overlooked and must be stressed during operator training.

**Document Information** In preparing this document help has been taken from MSDS for Linde (US)

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End of Safety Data Sheet

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