2-85% CARBON DIOXIDE In ARGON

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	2-85% CARBON DIOXIDE In ARGON
Product Code(s)	G-107
UN-Number	UN1956
Recommended Use	Welding.
Trade Name	CORGON 80CORGON 100CORGON 150CORGON 200CORGON 250CRONIGON 20CRONIGON 2.5.
Supplier Address*	Linde Gas North America LLC - Linde Merchant Production Inc. - Linde LLC 575 Mountain Ave. Murray Hill, NJ 07974 Phone: 908-464-8100 www.lindeus.com Linde Gas Puerto Rico, Inc. Las Palmas Village Road No. 869, Street No. 7 Catano, Puerto Rico 00962 Phone: 787-641-7445 www.pr.lindegas.com Linde Canada Limited 5860 Chedworth Way Mississauga, Ontario L5R 0A2 Phone: 905-501-1700 www.lindecanada.com * May include subsidiaries or affiliate companies / divisions. For additional product information contact your local customer service.
Chemical Emergency Phone Number	Chemtrec: 1-800-424-9300 for US / 703-527-3887 outside US

2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

Simple asphyxiant
Contents under pressure
Keep at temperatures below 52°C / 125°F

Appearance Colorless | Physical State Compressed gas. | Odor Odorless

OSHA Regulatory Status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential Health Effects

Principle Routes of Exposure	Inhalation.

Acute Toxicity

Inhalation	Simple asphyxiant. May cause suffocation by displacing the oxygen in the air. Exposure to 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 respirations, 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	Contact with rapidly expanding gas near the point of release may cause frostbite.
Skin	Contact with rapidly expanding gas near the point of release may cause frostbite.
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	0-99	Ar
Carbon dioxide	124-38-9	2-85	CO_2

Additional information: Composition listed covers broad ranges rather than exact percentages for specific products.

4. FIRST AID MEASURES

Eye Contact	If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.
Skin Contact	For dermal contact or suspected frostbite, remove contaminated clothing and flush affected areas with lukewarm water. DO NOT USE HOT WATER. A physican should see the patient promptly if contact with the product has resulted in blistering of the dermal surface or in deep tissue freezing.
Inhalation	PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF INHALATION OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious inhalation victims should be assisted to an uncontaminated area and inhale fresh air. If breathing is difficult, administer oxygen. 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.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Not flammable.
Suitable Extinguishing Media	Use extinguishing agent suitable for type of surrounding fire.
Explosion Data	
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, MSHA / 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 spreading of vapors through sewers, ventilation systems and confined areas.
Methods for Containment	Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. If leak is in 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 or an authorized distributor.
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 distance, use a cart designed to transport cylinders. Use equipment rated for cylinder pressure. Use backflow preventive device in piping. Never insert an object (e.g. wrench, screwdriver, pry bar,etc.) into valve cap openings. Doing so may damage valve, causing leak to occur. Use an adjustable strap wrench to remove over-tight or rusted caps. Close valve after each use and when empty. If user experiences any difficulty operating cylinder valve discontinue use and contact 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 Compressed Gas Association's Pamphlets P-1 and Safety Bulletin SB-2.
Storage	Protect from physical damage. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Keep at temperatures below 52°C / 125°F. Full and empty cylinders should be segregrated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Always store and handle compressed gas cylinders in accordance with Compressed Gas Association, pamphlet CGA-P1, Safe Handling of Compressed Gases in Containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

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

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.
Personal Protective Equipment	
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 practice.

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^3@20°C
Carbon dioxide	56 °C	-56 °C	44.00	-	0.145 g / ml @ 25°C	838 psig (5778 kPa) @ 21.1°C	1.522	1.839

The following information is for the INERT components that may be part 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^3@20°C
Argon	-185.9 °C	-189.4 °C	39.94	-	0.056 (vol / vol @ 0°C and 1 atm)	Above critical temperature	1.38	1.65

10. STABILITY AND REACTIVITY

Stability	Stable.
Incompatible Products	Carbon dioxide is incompatible with: Certain reactive metals, hydrides, moist cesium monoxide, or lithium acetylene carbide diammino 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	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)

Chronic 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 Toxicity — 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.

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 (40 CFR Part 82).

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 for proper disposal.

Contaminated Packaging — Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT

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
Emergency Response Guide Number	126

TDG

Proper Shipping Name	Compressed gas, n.o.s.
Hazard Class	2.2

UN-Number	UN1956
Description	UN1956,COMPRESSED GAS, N.O.S.,2.2

MEX

Proper Shipping Name	Compressed gas, n.o.s.
Hazard Class	2.2
UN-Number	UN1956
Description	UN1956 Compressed gas, n.o.s.(Argon, Carbon Dioxide),2.2

IATA

UN-Number	UN1956
Proper Shipping Name	Compressed gas, n.o.s.
Hazard Class	2.2
ERG Code	2L
Description	UN1956,Compressed gas, n.o.s.(Argon, Carbon Dioxide),2.2
Maximum Quantity for Passenger	75 kg
Maximum Quantity for Cargo Only	150 kg
Limited Quantity	No information available.

IMDG / IMO

Proper Shipping Name	Compressed gas, n.o.s.
Hazard Class	2.2
UN-Number	UN1956
EmS No.	F-C, S-V
Description	UN1956, Compressed gas, n.o.s.(Argon, Carbon Dioxide),2.2

ADR

Proper Shipping Name	Compressed gas, n.o.s.
Hazard Class	2.2
UN-Number	UN1956
Classification Code	1A
Description	UN1956 Compressed gas, n.o.s.(Argon, Carbon Dioxide),2.2,

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	Complies
EINECS / ELINCS	Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL / NDSL - Canadian Domestic Substances List / Non-Domestic Substances List
EINECS / ELINCS - European Inventory of Existing Commercial Chemical Substances / EU List of Notified Chemical Substances

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311 / 312 Hazard Categories

Acute Health Hazard	Yes

Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	Yes
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Risk and Process Safety Management Programs

This material, as supplied, does not contain any regulated substances with specified thresholds under 40 CFR Part 68.
This product does not contain any substances regulated as Highly Hazardous Chemicals pursuant to the 29 CFR Part 1910.110.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

CERCLA / SARA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Argon	X	X	X	-	X
Carbon dioxide	X	X	X	-	X

International Regulations

Chemical Name	Carcinogen Status	Exposure Limits
Carbon dioxide	-	Mexico: TWA= 5000 ppm Mexico: TWA= 9000 mg / m^3 Mexico: STEL= 15000 ppm Mexico: STEL= 27000 mg / m^3

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

A Compressed gases

16. OTHER INFORMATION

Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501
Issuing Date	10-Feb-2011
Revision Date	13-Oct-2014
Revision Number	1
Revision Note	Not applicable.

NFPA	Health Hazard 2	Flammability 0	Stability 0	Physical and Chemical Hazards Simple asphyxiant
HMIS	Health Hazard 1	Flammability 0	Physical Hazard 3	Personal Protection -

Note: Ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2009, CGA Recommended Hazard Ratings for Compressed Gases, 3rd Edition.

End of Safety Data Sheet