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Safety advice.

Compressed gases

Safety Data Sheet
CRONIGON® 2He55
Issue Date: 01 August 2014
Revision No: 01
Revision Date: 01-January-2022
Version: 01

1. PRODUCT AND COMPANY IDENTIFICATION

Trade Name	CRONIGON® 2He55
UN-No	UN 1956
Recommended Use	Compressed Gas for Gas Metal Arc Welding
Manufacturer's Registered Office	Oxygen House, P-43 Taratala Road, Kolkata - 700088
Telephone Number	(+91 33) 66021600
24 Hour Emergency Contact No:	(+91) 9831851034

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2. HAZARDS IDENTIFICATION

WARNING	EMERGENCY OVERVIEW	
	Simple asphyxiant - this product does not contain oxygen and may cause suffocation if released in confined area. Maintain oxygen levels above 19.5%. Contents under pressure this line will be changed by High pressure compressed gas Keep at temperatures below 52°C / 125°F	
Appearance Colorless	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 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

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

None known. 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	43	Ar
Helium	7440-59-7	55	He
Carbon dioxide	124-38-9	2	CO ₂

Additional information:

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

4. FIRST-AID MEASURES

Eye Contact

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

Skin Contact

None known.

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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.

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.

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, 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 Ltd.

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 a short distance, 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 re-fill 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 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 areas of non-combustible construction away from high traffic areas and emergency exits. Keep at temperatures below 52°C / 125°F.
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 Cylinders, Rules, 2016

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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 (va- cated) STEL: 30000 ppm (vacated) STEL: 54000 mg/m ³	IDLH: 40000 ppm TWA: 5000 ppm TWA: 9000 mg/m ³ STEL: 54000 mg/m ³ 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.

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 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 ³ @20°C
Carbon dioxide	56°C	-56°C	44.00	-	0.145 g/ml @ 25°C	838 psig (5778 kPa) @ 21.1°C	1.52	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 ³ @20°C
Helium	-268.94°C	-272.0°C	4.00	-	0.0089 (vol/vol @ 20°C and 1 atm)	Above critical temperature	0.14	0.17
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

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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 remove this and include etc. 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 based on information supplied.
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)

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.

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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 Ltd 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.(Carbon Dioxide, Argon, Helium), 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. 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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