

## Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

Date of issue: 05/11/2017

Version: 1.0

SECTION 1: Identification	
1.1. Product identifier	
Product form	: Mixtures
Trade name	: ARCAL <sup>™</sup> 21/ BLUESHIELD <sup>™</sup> 6/ BLUESHIELD <sup>™</sup> 7/ BLUESHIELD <sup>™</sup> 8/BLUESHIELD <sup>™</sup> 21/AL FLUX <sup>™</sup>
Product code	: CA-2002-05243
Other means of identification	: Carbon Dioxide (4.00% - 35.00%) in Argon
1.2. Recommended use and restriction	ons on use
Recommended uses and restrictions	: Shielding gas for arc welding.
1.3. Supplier	
•••	
Air Liquide Canada Inc. 1250, René Lévesque West Blvd. Suite 1700 H3B 5E6 Montreal, QC - Canada T 1-800-817-7697 www.airliquide.ca	
1.4. Emergency telephone number	
Emergency number	: 514-878-1667
<b>SECTION 2: Hazard identification</b>	
2.1. Classification of the substance of	n mixture
Classification (GHS-CA)	1000
1 1 5	H280
Full text of H statements : see section 16	
2.2. GHS Label elements, including p	precautionary statements
GHS-CA labelling	
Hazard pictograms (GHS-CA)	
	GHS04
Signal word (GHS-CA)	: Warning
Hazard statements (GHS-CA)	: H280 - Contains gas under pressure; may explode if heated OSHA-H01 - May displace oxygen and cause rapid suffocation CGA-HG03 - May increase respiration and heart rate
Precautionary statements (GHS-CA)	<ul> <li>P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.</li> <li>P403 - Store in a well-ventilated place</li> <li>P261 - Avoid breathing gas</li> <li>P202 - Do not handle until all safety precautions have been read and understood</li> <li>P308+P313 - IF exposed or concerned: Get medical advice/attention</li> <li>P280 - Wear eye protection, face protection, protective clothing, protective gloves</li> <li>P271 - Use only outdoors or in a well-ventilated area</li> <li>P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing</li> <li>CGA-PG05 - Use a back flow preventive device in the piping</li> <li>CGA-PG06 - Close valve after each use and when empty</li> <li>CGA-PG10 - Use only with equipment rated for cylinder pressure</li> </ul>

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2.3.	Other hazards				
No add	No additional information available				
2.4.	Unknown acute toxic	ity (GHS-CA)			
No data	a available				
SECT	ION 3: Composition	n/information on ingredien	ts		
3.1.	Substances				
Not app	blicable				
3.2.	Mixtures				
Name	•	Chemical name / Synonyms	Product identifier	%	Classification (GHS-CA)
Argon		Argon, compressed	(CAS-No.) 7440-37-1	65 - 96	Press. Gas (Comp.), H280
Carbo	n Dioxide		(CAS-No.) 124-38-9	4 - 35	Press. Gas (Liq.), H280
<b>SECT</b> 4.1.	ION 4: First-aid me Description of first ai				
	Description of mist a	u measures			
First-ai	d measures after inhalatio	n : Remove victim unwell, seek me		est in a pos	ition comfortable for breathing. If you feel
First-ai	d measures after skin con	tact : Adverse effects	not expected from this p	oroduct.	
First-ai	d measures after eye cont	tact : Adverse effects	not expected from this p	oroduct.	
First-ai	d measures after ingestior	n : Ingestion is not	considered a potential ro	oute of expo	osure.
4.2.	Most important symp	toms and effects (acute and dela	iyed)		
• •	ms/effects after inhalation	• •			May increase respiration and heart rate.
	ms/effects after skin cont		not expected from this p		
	ms/effects after eye conta		not expected from this p		
	ms/effects after ingestion ms/effects upon intravence stration	6	considered a potential rc	bute of expo	sure.
Chronic	symptoms	: Adverse effects	not expected from this p	oroduct.	
4.3.	Immediate medical at	ttention and special treatment, if	necessarv		
	nedical advice or treatmer		II, seek medical advice. I	f breathing	is difficult, give oxygen.
SECT	ION 5: Fire-fighting	measures			
5.1.	Suitable extinguishin	g media			
Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.					
5.2.	Unsuitable extinguis	hing media			
Unsuita	ble extinguishing media	: Do not use wate	er jet to extinguish.		

5.3. Specific hazards arising from the ha	Specific hazards arising from the hazardous product		
Fire hazard	: The product is not flammable.		
Explosion hazard	: Product is not explosive. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.		
Hazardous combustion products	: None		
5.4. Special protective equipment and p	recautions for fire-fighters		
Firefighting instructions	: In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Exposure to fire may cause containers to rupture/explode. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.		
Protection during firefighting	: Standard protective clothing and equipment (e.g, Self Contained Breathing Apparatus) for fire fighters. Do not enter fire area without proper protective equipment, including respiratory protection.		

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SECTION 6: Accidental release measures			
6.1. Personal precautions, protective e	Personal precautions, protective equipment and emergency procedures		
General measures	: Ensure adequate ventilation.		
Personal Precautions, Protective Equipment and Emergency Procedures : EVACUATE ALL PERSONNEL FROM AFFECTED AREA. Use appropriate protective equipment. If leak is on user's equipment, be certain to purge piping before attempting repairs. If leak is on a container or container valve contact the closest Air Liquide Canada location.			
6.2. Methods and materials for containment and cleaning up			
For containment	: Try to stop release if without risk.		
Methods for cleaning up : Dispose of contents/container in accordance with local/regional/national/international regulations.			
6.3. Reference to other sections			
For further information refer to section 8: "Exposure controls/personal protection"			

SECTION 7: Handling and storage	
7.1. Precautions for safe handling	
Precautions for safe handling	: Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area.
Hygiene measures	: Do not eat, drink or smoke when using this product.
Additional hazards when processed	: Pressurized container: Do not pierce or burn, even after use. Use only with equipment rated for cylinder pressure. Close valve after each use and when empty.
7.2. Conditions for safe storage, includi	ng any incompatibilities
Technical measures	: Comply with applicable regulations.
Storage conditions	<ul> <li>Do not expose to temperatures exceeding 52 °C/ 125 °F. Keep container closed when not in use. Protect cylinders from physical damage; do not drag, roll, slide or drop. Store in well ventilated area.</li> </ul>
Incompatible products	: None known.
Incompatible materials	: None known.

## SECTION 8: Exposure controls/personal protection

8.1. Control parameters		
Carbon Dioxide (124-38-9)		
USA - ACGIH	ACGIH TWA (ppm)	5000 ppm
USA - ACGIH	ACGIH STEL (ppm)	30000 ppm
USA - OSHA	OSHA PEL (TWA) (mg/m³)	9000 mg/m <sup>3</sup>
USA - OSHA	OSHA PEL (TWA) (ppm)	5000 ppm
Canada (Quebec)	VECD (mg/m <sup>3</sup> )	54000 mg/m <sup>3</sup>
Canada (Quebec)	VECD (ppm)	30000 ppm
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	9000 mg/m³
Canada (Quebec)	VEMP (ppm)	5000 ppm
Alberta	OEL STEL (mg/m³)	54000 mg/m <sup>3</sup>
Alberta	OEL STEL (ppm)	30000 ppm
Alberta	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Alberta	OEL TWA (ppm)	5000 ppm
British Columbia	OEL STEL (ppm)	15000 ppm
British Columbia	OEL TWA (ppm)	5000 ppm
Manitoba	OEL STEL (ppm)	30000 ppm
Manitoba	OEL TWA (ppm)	5000 ppm
New Brunswick	OEL STEL (mg/m³)	54000 mg/m <sup>3</sup>
New Brunswick	OEL STEL (ppm)	30000 ppm
New Brunswick	OEL TWA (mg/m³)	9000 mg/m <sup>3</sup>
New Brunswick	OEL TWA (ppm)	5000 ppm
New Foundland & Labrador	OEL STEL (ppm)	30000 ppm

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Carbon Dioxide (124-38-9)		
New Foundland & Labrador	OEL TWA (ppm)	5000 ppm
Nova Scotia	OEL STEL (ppm)	30000 ppm
Nova Scotia	OEL TWA (ppm)	5000 ppm
Nunavut	OEL STEL (ppm)	30000 ppm
Nunavut	OEL TWA (ppm)	5000 ppm
Northwest Territories	OEL STEL (ppm)	30000 ppm
Northwest Territories	OEL TWA (ppm)	5000 ppm
Ontario	OEL STEL (ppm)	30000 ppm
Ontario	OEL TWA (ppm)	5000 ppm
Prince Edward Island	OEL STEL (ppm)	30000 ppm
Prince Edward Island	OEL TWA (ppm)	5000 ppm
Saskatchewan	OEL STEL (ppm)	30000 ppm
Saskatchewan	OEL TWA (ppm)	5000 ppm
Yukon	OEL STEL (mg/m <sup>3</sup> )	27000 mg/m <sup>3</sup>
Yukon	OEL STEL (ppm)	15000 ppm
Yukon	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Yukon	OEL TWA (ppm)	5000 ppm

## 8.2. Appropriate engineering controls Appropriate engineering controls

: Ensure exposure is below occupational exposure limits (where available). Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Oxygen detectors should be used when asphyxiating gases may be released. Consider the use of a work permit system e.g. for maintenance activities.

Environmental exposure controls

: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

8.3. Individual protection measures/Personal protective equipment

#### Personal protective equipment:

Gloves. Safety glasses. Protective clothing. Safety shoes.

#### Hand protection:

Wear working gloves when handling gas containers.

#### Eye protection:

Wear safety glasses with side shields.

#### Skin and body protection:

Wear suitable protective clothing, e.g. lab coats, coveralls or flame resistant clothing.

#### **Respiratory protection:**

None necessary during routine operations. See Sections 5 & 6



#### Thermal hazard protection:

None necessary during routine operations.

#### Other information:

Wear safety shoes while handling containers.

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<b>SECTION 9: Physical and chemica</b>	l properties		
9.1. Information on basic physical and chemical properties			
Physical state	: Gas		
Appearance	: Clear, colorless gas.		
Colour	: Colourless		
Odour	: Odourless		
Odour threshold	: No data available		
pH	: No data available		
Relative evaporation rate (butylacetate=1)	: No data available		
Relative evaporation rate (ether=1)	: No data available		
Melting point	: No data available		
Freezing point	: No data available		
Boiling point	: No data available		
Flash point	: Not applicable (non-flammable gas)		
Auto-ignition temperature	: No data available		
Decomposition temperature	: No data available		
Flammability (solid, gas)	: See Section 2.1 and 2.2		
Vapour pressure	: No data available		
Vapour pressure at 50 °C	: No data available		
Relative density	: No data available		
Solubility	: Water: No data available		
Log Pow	: No data available		
Viscosity, kinematic	: No data available		
Explosive properties	: Not applicable (non-flammable gas).		
Oxidising properties	: None.		
Explosive limits	: Not applicable (non-flammable gas)		
9.2. Other information			

No additional information available

SECTION 10: Stability and react	ivity
10.1. Reactivity	
Reactivity	: None known.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: None known.
Conditions to avoid	: None under recommended storage and handling conditions (see section 7).
Incompatible materials	: None known.
Hazardous decomposition products	: Under normal conditions of storage and use hazardous decomposition products should not be produced.

SECTI	ON 11: Toxicological ir	oformation
11.1.	Information on toxicologica	al effects
Acute to:	xicity (oral)	: Not classified
Acute to:	xicity (dermal)	: Not classified
Acute to:	xicity (inhalation)	: Not classified

Carbon Dioxide (124-38-9)	
LC50 inhalation rat (ppm)	820000 ppm/4h
Argon (7440-37-1)	
LC50 inhalation rat (ppm)	820000 ppm/4h
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified

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Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

<b>SECTION 12: Ecological information</b>	
12.1. Toxicity	
No additional information available	
12.2. Persistence and degradability	
Carbon Dioxide (124-38-9)	
Persistence and degradability	No ecological damage caused by this product.
Argon (7440-37-1)	
Persistence and degradability	No ecological damage caused by this product.
12.3. Bioaccumulative potential	
Carbon Dioxide (124-38-9)	
BCF fish 1	(no bioaccumulation)
Log Pow	0.83
Bioaccumulative potential	No ecological damage caused by this product.
Argon (7440-37-1)	
Log Pow	Not applicable for inorganic gases.
Bioaccumulative potential	No ecological damage caused by this product.
12.4. Mobility in soil	
Carbon Dioxide (124-38-9)	
Log Pow	0.83
Ecology - soil	No ecological damage caused by this product.
Argon (7440-37-1)	
Log Pow	Not applicable for inorganic gases.
Ecology - soil	No ecological damage caused by this product.
12.5. Other adverse effects	
Effect on ozone layer	: No known effects from this product.
GWPmix comment	: No known effects from this product.
SECTION 13: Disposal consideration	IS
13.1. Disposal methods	
Waste treatment methods	: Contact supplier if guidance is required. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded.
Product/Packaging disposal recommendations	<ul> <li>Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for more guidance on suitable disposal methods.</li> </ul>
Ecology - waste materials	: None known.
SECTION 14: Transport information	
14.1. Basic shipping description	
In accordance with TDG	
Transportation of Dangerous Goods	
UN-No. (TDG)	: UN1956
TDG Primary Hazard Classes	: 2.2 - Class 2.2 - Non-Flammable, Non-Toxic Gas.
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Transport Document Description	: UN1956 Compressed gas, n.o.s., 2.2
Proper Shipping Name	: Compressed gas, n.o.s.
Hazard labels (TDG)	: 2.2 - Non-flammable, non-toxic gases
TDG Special Provisions	16 - (1) The technical name of at least one of the most dangerous substances that predominantly contributes to the hazard or hazards posed by the dangerous goods must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(ii)(A) of Part 3 (Documentation). The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4 (Dangerous Goods Safety Marks). (2) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a shipping document or on a small means of containment when Canadian law for domestic transport or an international convention for international transport prohibits the disclosure of the technical name: (a)UN1544, ALKALOID SALTS, SOLID, N.O.S. (c)UN3140, ALKALOIDS, SOLID, N.O.S.; (b)UN3245, MEDICINE, LIQUID, TOXIC, N.O.S; (c)UN3240, MELICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S; or (a)UN3249, MEDICINE, SOLID, TOXIC, N.O.S. (c)UN3240, MEXICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S; or (a)UN3249, MEDICINE, SOLID, TOXIC, N.O.S. (b)UN3241, INFECTIOUS SUBSTANCE, AFFECTING ANIMALS. SOR/2014-306 148 - (1) Part 5 (Means of Containment) does not apply to radiation detectors that contain these dangerous goods is not required to be shown on a small pressure, when the receptacle is less than 5 000 KPa; (b)the capacity of each receptacle is less than 12 L; (c)each receptacle is less than 5 000 KPa; (b)the capacity of each receptacle is less then the new for gressure in each receptacle is less than 5 000 KPa; (b)the capacity of each receptacle is less then the receptacle is non-refillable pressure (c)each receptacle is manufactured from material that will not fragment upon rupture; (e)each detector is manufactured from material that will not fragment upon rupture; (e)each detector is manufactured from material that will not fragment upon rupture; (e)each detector is manufactured from material
Explosive Limit and Limited Quantity Index	: 0.125 L
Excepted quantities (TDG)	: E0
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index	· : 75 L
14.2. Transport information/DOT - USA	
Department of Transport	
DOT NA no.	: UN1956
UN-No.(DOT)	: 1956
DOT Symbols	: G - Identifies PSN requiring a technical name
Transport Document Description	: UN1956 Compressed gas, n.o.s., 2.2
Proper Shipping Name (DOT)	: Compressed gas, n.o.s.
Contains Statement Field Selection (DOT)	: DOT_TECHNICAL - Proper Shipping Name - Technical (DOT)

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Class (DOT)	: 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115
Division (DOT)	: 2.2
Hazard labels (DOT)	: 2.2 - Non-flammable gas
	2
Dangerous for the environment	: No
DOT Packaging Exceptions (49 CFR 173.xxx)	: 306;307
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 302;305
DOT Packaging Bulk (49 CFR 173.xxx)	: 314;315
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 75 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 150 kg
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Othor	information	
Other	mormation	

: No supplementary information available.

14.3. Air and sea transport	
IMDG	
UN-No. (IMDG)	: 1956
Proper Shipping Name (IMDG)	: Compressed gas, n.o.s.
Transport Document Description (IMDG)	: UN 1956 Compressed gas, n.o.s., 2.2
Class (IMDG)	: 2.2 - Non-flammable, non-toxic gases
IATA	
UN-No. (IATA)	: 1956
Proper Shipping Name (IATA)	: Compressed gas, n.o.s.
Transport Document Description (IATA)	: UN 1956 Compressed gas, n.o.s., 2.2
Class (IATA)	: 2.2 - Gases : Non-flammable, non-toxic

SECTION 15: Regulatory information
15.1. National regulations
Carbon Dioxide (124-38-9)
Listed on the Canadian DSL (Domestic Substances List)
Argon (7440-37-1)
Listed on the Canadian DSL (Domestic Substances List)
15.2. International regulations
Carbon Dioxide (124-38-9)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Listed on Turkish inventory of chemical

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#### Argon (7440-37-1)

Listed on the AICS (Australian Inventory of Chemical Substances)

- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Listed on the Korean ECL (Existing Chemicals List)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on INSQ (Mexican National Inventory of Chemical Substances)

#### **SECTION 16: Other information**

Date of issue

: 05/11/2017

Full text of H-statements:

H280 Contains gas under pressure; may explode if heated

SDS Canada (GHS)

THE INFORMATION, RECOMMENDATIONS AND DATA CONTAINED IN THIS DOCUMENT ARE INTENDED TO BE USED BY PROPERLY TRAINED AND QUALIFIED PERSONNEL ONLY AND AT THEIR SOLE RISKS AND DISCRETION. THE INFORMATION, RECOMMENDATIONS AND DATA HEREIN CONTAINED ARE DERIVED FROM SOURCES WHICH WE BELIEVE TO BE RELIABLE. HOWEVER, AIR LIQUIDE CANADA INC. MAKES NO REPRESENTATION AND GIVES NO WARRANTY OF ANY KIND WHATSOEVER WITH RESPECT TO THEIR ACCURACY OR COMPLETENESS AND ASSUMES NO LIABILITY FOR DAMAGES OR LOSS ARISING DIRECTLY OR INDIRECTLY FROM THEIR USE, WHETHER PROPER OR IMPROPER.