Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Colorless gas
* b)	Odour	Odorless
* c)	Odour threshold	Odour threshold is subjective and is inadequate to warn of over exposure.
d)	pH	Not applicable
e)	Melting point / freezing point	Argon: -189,34 °C Carbon dioxide: Sublimation -78,5 °C
f)	Initial boiling point and boiling range	Argon: -186°C (1,013 bar) Carbon dioxide: Sublimation -78,5 °C
* g)	Flash point	Not applicable to gases and gas mixture.
* h)	Evaporation rate	Not applicable to gases and gas mixture.
i)	Flammability (solid, gas)	No flammable
j)	Upper/lower flammability or explosive limits	No flammable
k)	Vapour pressure	Not applicable
l)	Vapour density	Argon: 5.7722 kg/m^3 (1.013 bar at boiling point) Argon: 1.6903 kg/m^3 (1.013 bar at 15 °C) Carbon dioxide: 1.8714 kg/m^3 (1.013 bar at 15 °C)
m)	Relative density (air=1)	Argon: 1,38 Carbon dioxide: 1,52
n)	Solubility(ies)	Argon: 67 mg/l (15 °C; 1,013 bar) Carbon dioxide: 1.7163 vol/vol (0 °C; 1.013 bar)
o)	Partition coefficient: n-octanol/water	Not available
p)	Auto-ignition temperature	Not applicable
q)	Decomposition temperature	Not applicable
r)	Viscosity	Argon: 2.1017E-04 Poise (1.013 bar e 0 °C) Carbon dioxide: 1.3711E-04 Poise (1.013 bar e 0 °C)
s)	Explosive properties	No explosive
t)	Oxidising properties	Not applicable

9.2 Other information

	Critical temperature (°C)	Critical pressure (bar)	Critical density kg/m^3	Triple point (temperature)	Triple point (pressure)
Argon	-122.46	48.63	535.6	-189.34 °C	0.687 bar
Carbon dioxide	30,98	73.77	467.6	-56.56 °C	5.187 bar

Section 10: Stability and reactivity

10.1 Reactivity

* Inert gas.
No reactivity hazard other than the effects described in sub-section below.

10.2 Chemical stability

Stable under normal conditions

10.3 Possibility of hazardous reactions

None

10.4 Conditions to avoid

* Keep away from heat/sparks/open flames/hot surfaces.

10.5 Incompatible materials

* No reaction with any common materials in dry or wet conditions.

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11: Toxicological information

11.1 Information on toxicological effects

a) acute toxicity: no known toxicological effects from this product
* b) skin corrosion/irritation: based on available data, the classification criteria are not met.
* c) serious eye damage/irritation: based on available data, the classification criteria are not met.
* d) respiratory or skin sensitisation: based on available data, the classification criteria are not met.
* e) germ cell mutagenicity: based on available data, the classification criteria are not met.
* f) carcinogenicity: based on available data, the classification criteria are not met.
* g) reproductive toxicity: based on available data, the classification criteria are not met.
* h) STOT-single exposure: based on available data, the classification criteria are not met.
* i) STOT-repeated exposure: based on available data, the classification criteria are not met.

* j) aspiration hazard: not applicable to gases and gas mixtures.

Section 12: Ecological information

12.1 Toxicity

No known ecological damage caused by this product.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

* The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.

12.4 Mobility in soil

* The substance is a gas, not applicable.

12.5 Results of PBT and vPvB assessment

* Not classified as PBT or vPvB.

12.6 Other adverse effects

* No ecological damage caused by this product.

Section 13: Disposal considerations

13.1 Waste treatment methods

Do not discharge into any place where its accumulation could be dangerous, but in atmosphere or well ventilated area.
Our gas cylinders are not refillable. If your cylinder must be destroyed, consult distributor or supplier for specific recommendations.

Refer to section 6 and 7 for handling and action of inadvertent leakage of the waste.

Section 14: Transport information

14.1 UN number

UN 1956

14.2 UN proper shipping name

COMPRESSED GAS, N.O.S. (Argon / Carbon dioxide)

14.3 Transport hazard class(es)

2.2

14.4 Packing group

n.a.

14.5 Environmental hazards

n.a.

14.6 Special precautions for user

Avoid transport on vehicles where the load space is not separated from the driver's compartment.
Assure that the drivers knows the potential dangers of the loading and he is able to operate in case of emergency.
Ensure that the cylinders are firmly secured.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

n.a.

Additional information

Sea transport

EMS: F-C, S-V
Proper Shipping name: COMPRESSED GAS, N.O.S. (Argon / Carbon dioxide)

Air transport:

Cargo	Pkg Inst: 200
	Max Net Qty/Pkg: 150kg
Passenger	Pkg Inst: 200
	Max Net Qty/Pkg: 75kg
	ERG Code: 2L

Section 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Seveso directive 2012/18/UE: not covered.

15.2 Chemical safety assessment

A CSA does not need to be carried out for this product

Section 16: Other information

* The symbol * indicates that the information has been updated to the current revision.

GENERAL BIBLIOGRAPHY:

1. (EC) Regulation no. 1907/2006 of the European Parliament (REACH)
2. (EC) Regulation no. 1272/2008 of the European Parliament (CLP)
3. Guideline “Assogastecnici” - Edition May 2010
4. ESIS: European chemical Substances Information System
5. European Industrial Gases Association (EIGA) Doc. 169 Classification and Labelling guide

Remark for the User:
The information on this sheet is based on the available knowledge at the time of our last revision.
The user must make sure that information is appropriate and complete for the specific product destination.
This document cannot be considered as a warranty for specific properties of the product.
As product use does not fall on our direct control, the user must bear full responsibility for complying with all the rules and regulations in force relating to hygiene and safety. We disclaim any responsibility for improper uses.