

SAFETY DATA SHEET:
IG541
SECTION 1: Identification of the substance/mixture and of the company/undertaking
1.1 Product identifier

Product code: IG541
 Trade name: IG541
 REACH Registration No: Not applicable (mixture)
 CAS No.: Not applicable (mixture)
 EC No.: Not applicable (mixture)
 Index No.: Not applicable (mixture)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Fire extinguishing agent.

1.3 Details of the supplier of the safety data sheet

Supplier: MedicAir Industry srl
 Via T. Tasso, 29 - 20010 Pogliano Milanese (Mi)
 Telephone number: +39.02.93282361
 e-mail address of competent person responsible for the SDS): industry.info@medicair.it

1.4 Emergency telephone number: Tel.: +39 02 932821 (ore ufficio)

SECTION 2: Hazards identification
2.1 Classification of the substance or mixture

Classificazione secondo il regolamento (CE) n. 1272/2008 [CLP]
 Press. Gas (Comp.); H280 Gases under pressure: Compressed gas

2.2 Label elements

Label elements according to the Regulation (EC) No 1272/2008 (CLP)

Hazard pictograms:



GHS04

Avvertenza:

Warning

Hazard statements:

H280 - Contains gas under pressure; may explode if heated.

Precautionary statements:

- Prevention: --
- Response: --
- Storage: P403 - Store in a well-ventilated place.

2.3 Other hazards

Asphyxiant in high concentrations.

SEZIONE 3: composizione / informazione sugli ingredienti
3.2 Mixtures

CAS No.	EC No.	Index No.	REACH Registration No.	% [weight]	Substance name	Classification according to Regulation (EC) No 1278/2008 (CLP).
7727-37-9	231-783-9	--	*1	52	Nitrogen	Press. Gas (Comp.) (H280)
7440-37-1	231-147-0	--	*1	40	Argon	Press. Gas (Comp.) (H280)
124-38-9	204-696-9	--	*1	8	Carbon dioxide	Press. Gas (Liq.) (H280)

Contains no other components or impurities which will influence the classification of the product.

*1: Listed in Annex IV / V REACH, exempted from registration

SECTION 4: First aid measures
4.1 Description of first aid measures

Inhalation:	Remove victim to uncontaminated area. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped.
Skin contact:	Adverse effects not expected from this product.
Eye contact:	Adverse effects not expected from this product.
Ingestion:	Ingestion is not considered a potential route of exposure.

4.2 Most important symptoms and effects, both acute and delayed

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.

4.3 Indication of any immediate medical attention and special treatment needed

Get medical advice/attention if you feel unwell.

SECTION 5: Firefighting measures
5.1 Extinguishing media

Suitable extinguishing media:	Suitable extinguishing media:
Unsuitable extinguishing media:	Unsuitable extinguishing media:

5.2 Special hazards arising from the substance or mixture

Specific hazards:	Exposure to fire may cause containers to rupture/explode.
Hazardous combustion products:	None.

5.3 Advice for firefighters

Specific methods:	If possible, stop flow of product. Cool endangered receptacles with water spray jet from a protected position. Cool the surrounding area with water (from a protected position) to contain the fire.
Special protective equipment for fire fighters:	Firefighters should use standard protective equipment, including flame retardant overalls, helmet with face shield, gloves, rubber boots and, in enclosed spaces, SCBA self-contained breathing apparatus. EN 469 Protective clothing for firefighters. EN 15090 Footwear for use by firefighters for fire suppression. EN 659 Protective gloves for firefighters. EN 443 Helmets for firefighting in buildings and other structures. EN 137 Self-contained open circuit compressed air breathing apparatus with full face mask.

SECTION 6: Accidental release measures
6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate air ventilation.
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Avoid entering sewers, basements, excavations, and areas where accumulation may be dangerous.
Monitor the concentration of the released product.
Evacuate area.

6.2 Environmental precautions

Try to stop release.

6.3 Methods and material for containment and cleaning up

Ventilate area.

6.4 Reference to other sections

Information on personal protection and disposal is given in sections 8 and 13..

SECTION 7: Handling and storage

7.1 Precautions for safe handling

SAFE USE OF THE PRODUCT

Do not breathe gas.

Use only properly specified equipment which is suitable for this product, its supply pressure and temperature.

Only experienced and properly instructed persons should handle gases under pressure.

The product must be handled in accordance with good industrial hygiene and safety procedures.

Avoid suck back of water, acid and alkalis.

Ensure the complete gas system was (or is regularly) checked for leaks before use.

Contact your gas supplier if in doubt.

SAFE HANDLING OF THE GAS CYLINDER

Refer to supplier's container handling instructions.

Do not allow back feed into the container.

Open the valve slowly to avoid pressure shock.

Protect cylinders from physical damage; do not drag, roll, slide or drop.

When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders.

If user experiences any difficulty operating cylinder valve discontinue use and contact supplier.

Never attempt to repair or modify container valves or safety relief devices.

Damaged valves should be reported immediately to the supplier.

Keep cylinder valve outlets clean and free from contaminants particularly oil and water.

Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.

Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer gases from one cylinder/container to another. Never use direct flame or electrical heating devices to raise the pressure of a container.

Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.

7.2 Conditions for safe storage, including any incompatibilities

Keep cylinders below 50°C in a well-ventilated place.

Observe all regulations and local requirements regarding storage of cylinders.

Cylinders should not be stored in conditions likely to encourage corrosion.

Cylinders should be stored in the vertical position and properly secured to prevent them from falling over.

Stored cylinders should be periodically checked for general condition and leakage.

Store cylinders in location free from fire risk and away from sources of heat and ignition.

7.3 Usi finali particolari

See subsections 1.2

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits [Carbon Dioxide]

ILV (EU) - 8 H: 9000 mg/m³

ILV (EU) - 8 H: 5000 ppm

TLV[©] -TWA: 5000 ppm

TLV[©] -STEL: 9000 ppm

DNEL - Derived-No Effect Level (Worker): --

PNEC - Predicted No-Effect Concentration: --

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Systems under pressure should be regularly checked for leakages.

Provide adequate general and local exhaust ventilation.

Consider work permit system e.g., for maintenance activities.

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8.2.2 Individual protection measures, e.g. personal protective equipment

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Wear safety glasses with side shields (Standard EN 166 - Personal eye-protection).

Wear working gloves when handling gas containers (Standard EN 388 - Protective gloves against mechanical risk).

8.2.3 Environmental exposure controls

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

SEZIONE 9: proprietà fisiche e chimiche
9.1 Information on basic physical and chemical properties

Appearance:	
a) Physical state	gas (a 20°C and 1013 hPa)
Colour	Colorless
b) Odour:	Odorless
c) Odour threshold:	Odour threshold is subjective and inadequate to warn of overexposure
d) pH:	Not applicable
e) Melting point / Freezing point:	[Nitrogen: -210 °C] [Argon: -189 °C] [Carbon dioxide: -56,6 °C]
f) Boiling point:	[Nitrogen: -196 °C] [Argon: -186 °C]
g) Flash point:	Not applicable for gases and gas mixtures
h) Evaporation rate:	Not applicable for gases and gas mixtures
i) Flammability (solid, gas):	Non flammable
j) Explosive limits:	Not classified
k) Vapour pressure:	[Carbon dioxide: 57,3 bar]
l) Vapour density:	[Nitrogen: 1,1] [Argon: 1,784 kg/m ³ @ 0 °C, 1013 mbar]
m) Relative density, liquid (water=1):	[Nitrogen: 0,97] [Argon: 1,38] [Carbon dioxide: 0,82]
n) Water solubility:	[Nitrogen: 20 mg/l] [Argon: 67 mg/l @ 20 °C] [Carbon dioxide: 2000 mg/l]
o) Partition coefficient n-octanol/water:	[Carbon dioxide: 0,83]
p) Auto-ignition temperature:	Non applicabile
q) Decomposition temperature:	Not applicable
r) Viscosity:	--
s) Explosive properties:	Not applicable
t) Oxidising properties:	Not applicable

9.2 Other information

Critical temperature:	[Nitrogen: -147 °C] [Argon: -122 °C] [Carbon dioxide: 30 °C]
Oxidizing power coefficient	Not applicable

SECTION 10: Stability and Reactivity
10.1 Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2 Chemical stability

Stable under normal conditions.

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10.3 Possibility of hazardous reactions

None.

10.4 Conditions to avoid

Avoid humidity in systems.

10.5 Incompatible materials

None.

10.6 Hazardous decomposition products

None.

SECTION 11: Toxicological information
11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

- | | |
|--|---|
| a) Acute Toxicity:
[Carbon dioxide] | No toxicological effects are to be expected from this product if the exposure limit values are met.
Unlike simple asphyxiants, carbon dioxide has the ability to cause death even when normal oxygen levels (20-21%) are maintained. 5% CO ₂ has been found to act synergistically to increase the toxicity of certain other gases (CO, NO ₂). CO ₂ has been shown to enhance the production of carboxy- or met-hemoglobin by these gases possibly due to carbon dioxide's stimulatory effects on the respiratory and circulatory systems. |
| b) Skin corrosion/irritation: | Classification criteria are not met for this hazard class. |
| c) Serious eye damage/irritation: | Classification criteria are not met for this hazard class. |
| d) Respiratory or skin sensitisation: | Classification criteria are not met for this hazard class. |
| e) Germ cell mutagenicity: | Classification criteria are not met for this hazard class. |
| f) Carcinogenicity: | Classification criteria are not met for this hazard class. |
| g) Toxic for reproduction: | Classification criteria are not met for this hazard class. |
| h) STOT-single exposure: | Classification criteria are not met for this hazard class. |
| i) STOT-repeated exposure: | Classification criteria are not met for this hazard class. |
| j) Aspiration hazard: | Not applicable. |

SECTION 12: Ecological information
12.1 Toxicity

There is no known damage to the environment caused by this product.

12.2 Persistence and degradability

This product does not cause any ecological damage.

12.3 Bioaccumulative potential

This product does not cause any ecological damage.

12.4 Mobility in soil

This product does not cause any ecological damage.

12.5 Results of PBT and vPvB assessment

Not classified as PBT or vPvB.

12.6 Other adverse effect

- | | |
|--------------------------------|--|
| Effect on ozone layer: | 0 |
| Effect on the global warming: | If discharged in large quantities, it can contribute to the greenhouse effect. |
| Global warming potential (GWP) | [Carbon dioxide: 1]. |

SECTION 13: Disposal considerations

13.1 Waste treatment methods

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. Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org> for more guidance on suitable disposal methods

List of hazardous waste codes: 16 05 05: Gases in pressure containers other than those mentioned in 1 16 05 04*.

Contact the supplier if you think you need operating instructions.

SEZIONE 14: informazioni sul trasporto

- | | |
|---|---|
| 14.1 UN Number | 1956 |
| 14.2 UN Proper Shipping Name | COMPRESSED GAS, N.O.S. (nitrogen/argon) |
| 14.3 Transport Hazard Class (es) | 2.2 |
| 14.4 Packing Group | Not applicable |
| 14.5 Environmental hazards | Not applicable |
| 14.6 Special precautions for user | Avoid transport on vehicles where the load space is not separated from the driver's compartment.
Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.
Before transporting:
– Ensure there is adequate ventilation.
– Ensure that containers are firmly secured.
– Ensure cylinder valve is closed and not leaking.
– Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
– Ensure valve protection device (where provided) is correctly fitted. |
| 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable |

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
Seveso directive 2012/18/UE (Seveso III): Not covered.
- 15.2 Chemical safety assessment**
No chemical safety assessment is required for this product.

SECTION 16: Others information

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

- i) Indication of changes
Safety Data Sheet review according to Regulation EC No 2015/830
- ii) Abbreviations and acronyms
ATE = Acute Toxicity Estimate
CAS: Chemical Abstract Service
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CSA: Chemical Safety Assessment
EUH statement = CLP-specific Hazard statement
RRN = REACH Registration Number
DNEL = Derived No Effect Level
PBT - Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
vPvB - very Persistent and very Bioaccumulative

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- iii) Key literature references and sources for data
Regulation (EC) No. 1907/2006 [REACH]
Regulation (EC) No. 1272/2008 [CLP]
ECHA: European Chemical Agency
- iv) *In the case of mixtures, an indication of which of the methods of evaluating information referred to in Article 9 of Regulation (EC) No 1272/2008 was used for the purpose of classification*
Classification in accordance with calculation methods
- v) *Relevant H tips (number and full text)*
See sub-section 2.2
- vi) *advice on any training appropriate*
Make sure operators understand the dangers associated with using the product.
- vii) *Other information*
Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.
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