



INERT GAS IG55  
**Argonæx**  
IG-55







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## What is it the IG-55?

IG-55 is a gas composed of a mixture of equal parts of 50% Argon (IG-01) and 50% Nitrogen (IG-100).

Its components are found naturally in the environment, so it does not have a greenhouse effect and does not destroy the ozone layer. Its density is similar to that of air and both Argon and Nitrogen are clean, non-corrosive, colorless and tasteless gases, so they offer great flexibility in adapting to all actuation and release systems as they can be used at normal temperatures. with materials such as nickel, steel, stainless steel, copper, bronze, brass,...

IG-55 is stored as compressed gas in high pressure cylinders, for this reason the space needed for its storage will depend on its pressure and capacity.

Our IG-55 system is designed for a pressure of 300 bar, with which we achieve a great economy of space.

## How act?

Inert gases have their extinction principle in the reduction of oxygen concentration in the affected area.

When a fire starts, the IG-55 quickly penetrates the area and reduces the oxygen level by percentage from the 21% that is normally present to a limit that ranges between 13% and 11%, enough for the combustion to stop and be safe for people occupying the room. Thanks to the stratification of gases (Due to its density, Nitrogen rises and Argon falls) protection is achieved throughout the space, no matter how high the ceilings are.

During its unloading there is excellent visibility and as it does not leave residues there are no destructive effects on the equipment, which will continue to function normally and of course there will be nothing to clean.

## Physical properties

Chemical name	Nitrogen / Argon
Chemical formula	N <sub>2</sub> /Ar
N <sub>2</sub>	50% vol
Ar	50% vol
Molecular weight	33,98
Boiling point at 1,013 bar	-196° C
Critical temperature	-
Critical pressure	-
Maximum filling pressure	300 bar
NOAEL	43%
LOAEL	52%
Destructive power of ozone	0
Greenhouse potential	0
Toxicity	NO
Vision difficulties due to discharge	NO
Maximum discharge time for class A	120 Seg.
Maximum discharge time for class B	60 Seg.

## Application system

### Total Flood

Storage in a cylinder or battery of cylinders of the extinguishing agent necessary to, by discharging it into the enclosure, reach the required concentration of extinction for that type of fire. The cylinder or battery of cylinders are connected to a network of distribution pipes and to a series of discharge and gasification diffusers that distribute the extinguishing agent inside the enclosure to be protected.

Ordinary class A: Solid fuel fires, such as wood, plastic, ..., where the electric current is cut off at the time of detection.

Class A superior (A+): Solid fuel fires with electrical risk, the current is not cut after detection.

Ordinary Class B: Superficial fires that occur in flammable fuel liquids.

# Storage

## PRESSURIZED CYLINDERS AT 300 BARS

IG-55	LOAD DENSITY
CLASE A	0,73 Kg
CLASE A+	0,85 Kg
CLASE B	0,91 Kg

CYLINDER CAPACITY	Kg	m <sup>3</sup>
80 L	32,1	22,77
120 L	48,2	34,15
140 L	56,2	39,84

## Normative

- EN 15004-9: Extinguishing systems using gaseous agents: Physical properties and design systems using IG-55.
- EN 15004-1: Extinguishing systems using gaseous agents: Design, installation and maintenance.
- NFPA 2001: Clean Agent Fire Extinguishing Systems.

EXTINGUISHING CONCENTRATION		
A CLASS	A+ CLASS	B CLASS
40,3%	45,2%	47,60%

SAFETY MARGIN	
NEL NOAEL	12 Vol%O <sub>2</sub> 43%
LEL LOAEL	10 Vol%O <sub>2</sub> 52%

Exposure time table according to EN 15004-1 and NFPA 2001

Oxygen concentration designed for inert gases	12%	from 10 to 12%	from 8 to 10%	less than 8%
Occupation of normal areas	PERMITTED	PERMITTED	NOT ALLOWED	NOT ALLOWED
Exposure time limit	5 min	3 min	30 seg	0

## Valve with regulated outlet pressure

The valve allows a constant regulation of pressure, in this way the gas is discharged in a controlled manner and at a maximum of 60 bar.

The pneumatic discharge control allows a rational use of the needs of the installation, maintaining a constant release of the agent with minimum overpressures.

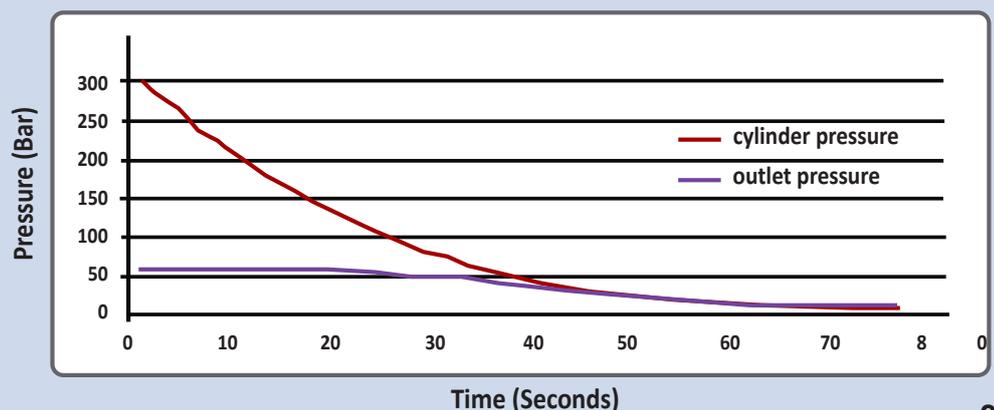
Maximum inlet pressure: 370 bar.

Maximum outlet pressure: 60 bar.

Section Ø 12mm.

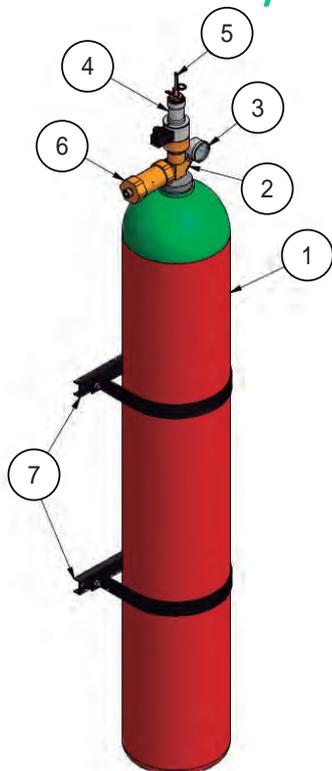


### CONSTANT PRESSURE REGULATION



# Extinction with inerts

## Autonomous cylinders



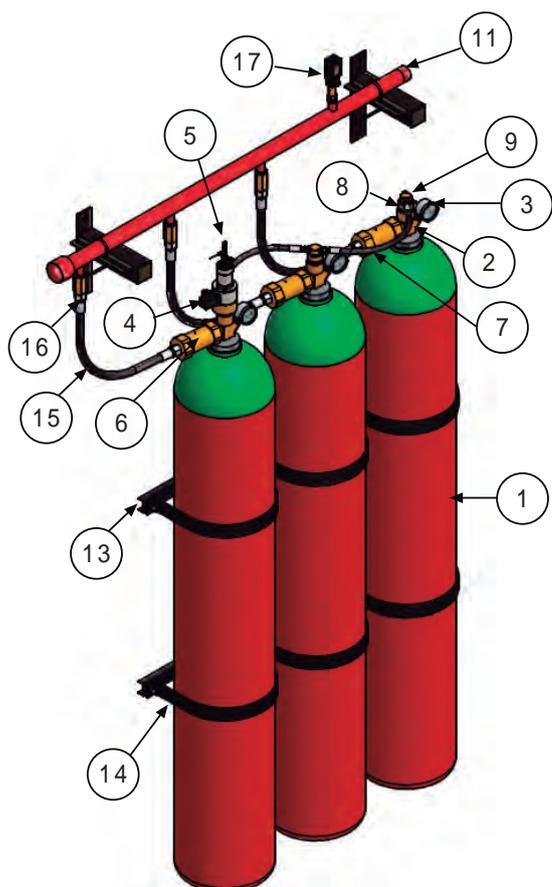
Autonomous high-pressure cylinders made of heat-treated alloy steel without welding according to MIE AP7 instructions for pressure equipment and European Directive 84/525/CEE.

Available in three sizes, 80, 120 and 140L.

Components:

1. Cylinder
2. Inert valve
3. Manometer with pressure switch 300 bar
4. Electric actuator
5. Manual actuator
6. Pressure regulator
7. Hardware

## Cylinder batteries



Batteries of high pressure cylinders of 80, 120 and 140L made of heat-treated alloy steel without welding according to MIE AP7 instructions for pressure equipment and European Directive 84/525/CEE.

The batteries are made up of slave cylinders and a pilot cylinder, except in the case of systems with directional valves in which all cylinders will be slaves and are equipped with a separate nitrogen pilot bottle.

Cylinder batteries can be grouped into:

- Single Row
- Double row

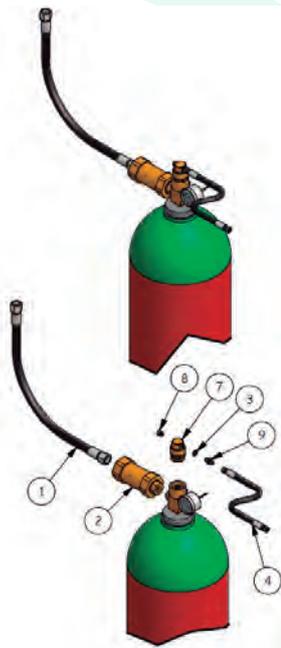
Components:

- |   |                             |
|---|-----------------------------|
| 1. Cylinder                               | 10. Inert collector support |
| 2. Valve for inert materials DN12         | 11. Collector               |
| 3. Manometer with pressure switch 300 bar | 12. Abarcon                 |
| 4. Inert valve electric actuator          | 13. Rear crossbar           |
| 5. Manual actuator                        | 14. Cylinder hardware bow   |
| 6. Pressure regulator                     | 15. Discharge hose          |
| 7. Trigger hose                           | 16. Check valve             |
| 8. Pneumatic actuator                     | 17. Step contactor          |
| 9. Relief valve                           |                             |

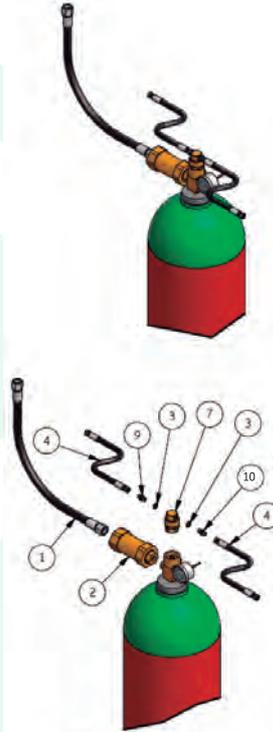
# at a glance

## Types of Cylinders

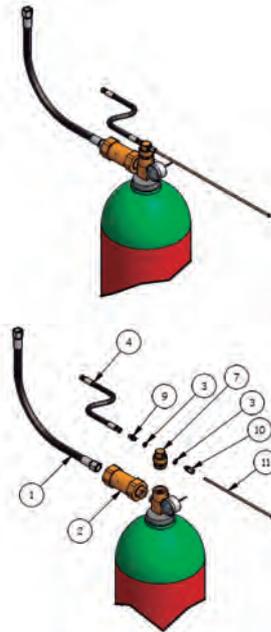
**End slave cylinder**



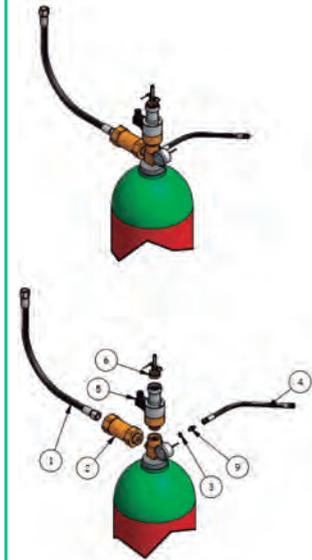
**Cilindro esclavo intermedio**



**Slave cylinder in systems with directions.**



**Pilot cylinder**



**Components:**

- 1. 3/4" discharge hose
- 2. Pressure regulator.
- 3. Joint 1/8"
- 4. 1/8" trigger hose
- 5. Electric actuator

- 6. Manual actuator
- 7. Pneumatic actuator
- 8. Relief valve
- 9. 1/8" stud
- 10. Male adapter 1/8" to bicone 6

- 11. 6x1 copper pipe
- 12. 1/4" female adapter to 6 bicone
- 13. Reducer adapter male 3/4" male 1/4"
- 14. Adapter female 3/4" female 3/4"

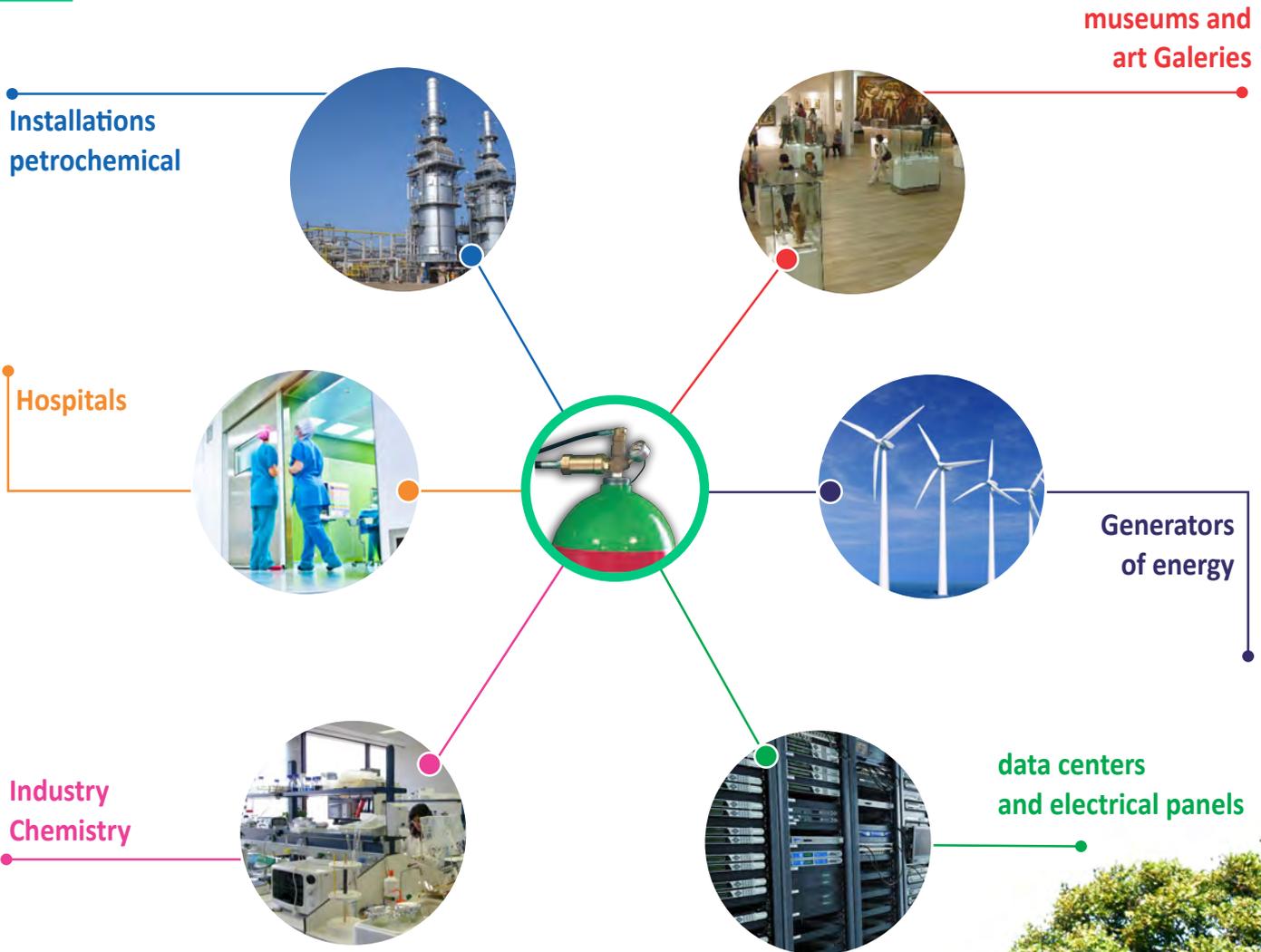
**Nitrogen Pilot Bottle**



**Pilot bottle components:**

- 1. Copper pipe
- 2. Inert valve
- 3. Cylinder
- 4. Electric actuator
- 5. Manual actuator
- 6. Pressure gauge with pressure switch
- 7. Pilot bottle adapter
- 8. Joint 1/8"
- 9. 1/8" adapter
- 10. Fitting 1/8" to bicone of 6

# Argon<sup>æx</sup> Applications



## Advantages Argon<sup>æx</sup>

- 1. Clean extinction. Does NOT leave residue
- 2. Suitable for busy areas.
- 3. It does not affect global warming.
- 4. Non-polluting.
- 5. No impact on the ozone layer

## ZERO ODP AND ZERO GWP

ARGONAEX (IG-55) has zero ozone depletion potential (Ozone Depletion Potential ODP) and zero greenhouse effect potential (Global Warming Potential GWP), since it is composed of nitrogen and argon, inert gases naturally present in our atmosphere.

## NOT TOXIC

ARGONAEX (IG-55) does not contain carbon dioxide (CO<sub>2</sub>) or halocarbons. No possibility of toxic decomposition gases being produced even in contact with heat or flame.

## LOW REFILL COST

ARGONAEX (IG-55) is made up of a 50% mixture of nitrogen and argon, readily available for industrial use.

## VALVE WITH REGULATED PRESSURE CONTROL

The valve and cylinder assembly is provided with a patented constant pressure regulation system. The ARGONAEX (IG-55) extinguishing agent stored at 300 bar or 200 bar in the cylinder is discharged in a controlled manner at a maximum of 60 bar. This allows the use of lower pressure piping systems.

## CLEAR VISION

The discharge of ARGONAEX (IG-55) does not cause any visibility problems for the occupants to proceed with the evacuation of the room, there is no condensation in the air due to the discharge of the agent.

## AGENT CLEANSED

ARGONAEX (IG-55) can be used to protect enclosures with precision components, works of art, valuable items, electronic equipment,..., since it does not leave residues after discharge.

## EXTINGUISHING SYSTEMS CENTRALIZED

ARGONAEX (IG-55) systems can be designed for the protection of various zones by installing directional valves.

# Our commitment: services and guarantees



## Projects

The Aguilera Group offers its collaboration to engineering companies in fire detection, control and extinction projects, advising on the systems and coverage for each building. The projects department carries out the design and dimensioning of the system, the hydraulic calculations, the calibration of the diffusers and the installation isometric, advising on the effectiveness of the equipment in each risk and considering the operability in the maneuvers.



## Formación

Aware that we all want to know and control what we do, regardless of the technical support we provide to the installations that run with our products, the Aguilera Group offers training courses on the operation of our equipment, its installation and programming.



## Atención personal

At the Aguilera Group, each client is important. We are aware that not all of us have the same needs. For this reason, our team of professionals provides personal attention tailored to your requirements.



## Mantenimiento

The Aguilera Group undertakes to guarantee repair, reprogramming and supply of original spare parts after the warranty period.



## Servicio Técnico

With the aim of guaranteeing the proper functioning of the facilities, the Aguilera Group's technical department advises on the operation tests and start-up of the equipment, in addition to collaborating with the installer in all phases of the work.



## Garantía de los Equipos

The Aguilera Group guarantees the proper functioning of its equipment for 2 years from the date of delivery; We are responsible for the replacement or repair of those in which anomalies or manufacturing defects are observed and are delivered to our factory in Madrid.





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