



FIRE PREVENTION PLANT **N** FIREFIGHTER

2

**Isolcell**  
*Italia*

Current technology allows us to create plants which remove concerns about fire risks.

### **A NEW SAFETY STANDARD IN FIRE PREVENTION**

Isolcell has 50 years of experiences in research and development of new technologies related to the production of machines and systems to treat and modify gaseous mixtures. Using this controlled atmosphere experience we took the opportunity to develop a new and innovative prevention system with the aim of excluding the risk of fire in designated areas.

# **FIRE PREVENTION PLANT**



N<sub>2</sub> FireFighter® is an ecological, very effective and economic method to prevent and extinguish fire. Thanks to its extreme simplicity of installation it can be adapted to every new or existing situations. Isolcell's methodology has been particularly appreciated in those situations in which even the smallest fire could cause serious damage or loss. Traditional fire-fighting methods can be made difficult and onerous by technical, architectural or aesthetic restrictions. Furthermore, the large range of equipment already produced by Isolcell means low cost but effective prevention and treatment plants can be made to suit all requirements.

## NATURE: OUR MODEL OF PREVENTION

The atmosphere we breathe consists mainly of a mixture of nitrogen (78%) and oxygen (21%).

Nitrogen is an inert gas. Oxygen is the natural substance aiding every combustion process, including human respiration.

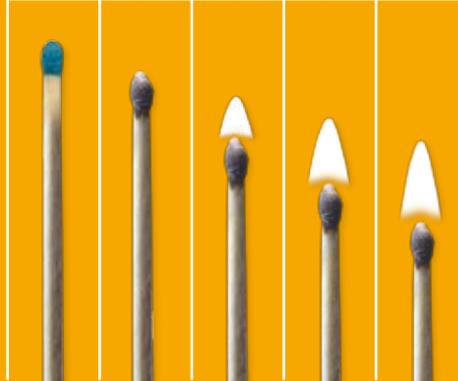
A fire will exist only if sufficient oxygen continuously reaches it to support the speed of the reaction.

When the amount of oxygen is not sufficient, a fire will suddenly be extinguished.

The methodology N<sub>2</sub> FireFighter® is based on that principle: to keep the atmosphere in the areas to be protected low in oxygen, less than normal ambient. This will automatically extinguish and inhibit combustion while remaining safe for humans. The effect of this auto-extinguishing atmosphere on humans is the same as the air we find on the mountains at about 3.300 m elevation; the partial pressure of oxygen at that height is equal to the partial pressure of oxygen in the methodology of N<sub>2</sub> FireFighter®.



4.500	3.000	2.000	1.000	0	ALTITUDE METERS
12,7%	14,5%	16,5%	18,5%	21%	OXYGEN CORRESPONDENCE a.s.l.



# A SAFE SYSTEM



## **N<sub>2</sub> FIREFIGHTER®: HOW DOES IT OPERATE**

Traditional fire-fighting systems have been conceived to automatically extinguish fires. N<sub>2</sub> FireFighter® prevents the start of any combustion in the protected areas by monitoring and controlling the proportion of oxygen to nitrogen in the enclosed atmosphere.

The technology of Isolcell Italia S.p.A. uses machines with specific, automatically – regenerating filters, and which modify air through a totally ecological process with very low energy consumption. The proportion of oxygen to nitrogen is changed without the need of additional products or compounds.

The resulting mixture is as highly effective in extinguishing fires as the best of the alternative fire-fighting products presently on the market.

Distinguishing N<sub>2</sub> FireFighter® from most of these products is that our methodology is completely natural and absolutely safe for human beings, consequently it can even be used in areas normally occupied by humans.

Furthermore, like the air we normally breathe, the fire-extinguishing atmosphere created is, odourless, colourless and does not leave any kind of residual and/or polluting substance.



## **THE ADVANTAGES OF N<sub>2</sub> FIREFIGHTER®'S METHODOLOGY**

It completely eliminates every fire risk in protected areas.

The auto-extinguish atmosphere is non-toxic, non polluting and leaves no residues on protected objects.

This fire-fighting technology is preferred by insurance companies.

The final cost of this equipment is cheaper than traditional solutions and is easier to install.

With N<sub>2</sub> FireFighter® there is little to no aesthetic impact on the space to be protected.

Installation is easy, even in situations which are particularly complicated or are subject to tight regulations.

The system can easily be fitted as part of main fire monitoring systems already available on the market.

The plant can be customised and easily expandible.



**The plant is suitable for:**

**Large warehouses, store rooms**

**Libraries and bookshops**

**Museums and archives**

**Finance institutions, banks,  
insurance companies**

**Data processing centres**

**Petrochemical and  
pharmaceutical industries**

**Rooms containing high value  
equipment or instruments**

## THE FIRE TRIANGLE

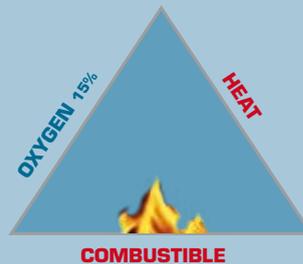
The presence of combustible material, adequate oxygen in the surrounding atmosphere and a heat source will start and keep a fire burning.

These 3 elements: fuel, oxygen and heat comprise the “fire triangle” describing every combustion process.

The basis of fire-fighting techniques is to break at least one side of the fire triangle. Generally, a fire-fighting technique has greatest effect if it can very quickly remove one or more of the three conditions which started the fire and keeps it burning.

N<sub>2</sub> FireFighter® prevents the problem even occurring by actively removing the possibility of combustion.

## OXYGEN REDUCTION



**Isolcell**  
*Italia*



**ISOLCELL ITALIA:  
A RELIABLE AND TRUSTWORTHY PARTNER**

The past 50 years have made Isolcell Italia S.p.A. an unquestionable world leader in the field of controlled and generated atmospheres. This has come from continuous innovation in research and in technological development that has led to high quality solutions and manufactured products offered to the world and is combined with a great capacity to provide application consultancy.

This leadership is further strengthened by the award of certificate of accreditation as a research laboratory by the Ministry of University and Scientific Research and by the ISO 9001:2001 quality system, which corroborates and guarantees the company's commitment and the importance given to a process of continuous improvement of products and production processes.

AIR	CONDITIONED AREA		
<b>Burns</b>	<b>Does not burn under</b>		
21%	15%	14%	13%
<b>Paper</b>			
<b>Polyethylene</b>			
<b>Wood</b>			
<b>Polystyrene</b>			
			



# Isolcell

*Italia*

ISOLCELL ITALIA SpA  
Via A. Meucci, 7 - 39055 Laives (BZ) - ITALY  
Tel. +39 0471 954050 - Fax +39 0471 953575  
e-mail: [isolcell@isolcell.it](mailto:isolcell@isolcell.it) - [www.isolcell.it](http://www.isolcell.it)



ISO 9001



VISION 2000