

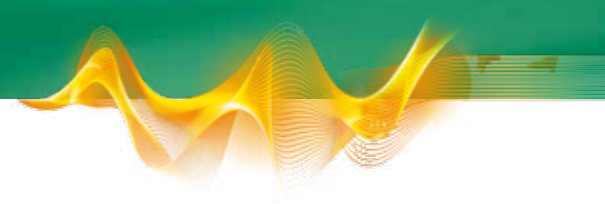


**DELIVERY CAPACITY
ON ICE.**



**DELIVERY
CAPACITY WITH
GUARANTEED
PROTECTION.**

**FIRE PROTECTION
IN SUB-ZERO TEMPERATURES.**



OxyReduct®

Active fire prevention system
for deep freeze storages and
cold storage warehouses

The challenge

FIRE PROTECTION UNDER EXTREME CONDITIONS.

Nowadays all over the world frozen and fresh food must be available around the clock. It is therefore essential that the delivery chain is not interrupted at any point. Deep freeze storages and warehouses are built and operated based on profitability while also taking into account issues of sustainability and globalisation. Central and fully automated logistics centres are gaining in importance resulting in increased demand for active fire protection that prevents the risk of fire. Even smoke, soot or extinguishing water contaminated with antifreeze agents cause time-critical interruptions in operation, loss of goods and technical damage.

Modern warehouse construction, high risk of fire



Full capacity utilization, large storage volumes, watertight building envelopes

Rack heights of up to 40 m, narrow spacings and lack of fire sections result in an unhindered, rapid spread of fire. In the event of a fire, fire extinguishing with sprinklers or by fire fighters is made more difficult because of the long distances that need to be covered to reach the source of the fire.

High level of automation

The risk of fire increases because typical causes of fire are faults on pickers, in switch cabinets or on cooling units and defrosters.

Sub-zero temperatures

In deep-freeze atmospheres, there is no humidity – the extremely dry air facilitates the spread of fire.

Rising fumes ignite goods stored on higher levels

Just a few minutes is all it takes for the fire to spread right up to the roof of the warehouse.

More promotionally effective and protective packaging materials

Cardboard packaging and special films made from polypropylene are highly flammable. Polypropylene behaves like a flammable liquid in a fire resulting in the raining down of burning droplets.

The solution

ACTIVE FIRE PREVENTION – AS SIMPLE AS IT IS INGENIOUS.

The OxyReduct® active fire prevention system eliminates from the outset the risk of fire breaking out or spreading. The system reduces the oxygen content in the air in the protected area to a level where the risk of fire is minimised significantly, but the protected area can still be accessed by personnel. The benefits for you: OxyReduct® not only protects your goods, your technical systems and your personnel from the consequences of fire, but also from the damage caused by water and other extinguishing agents.

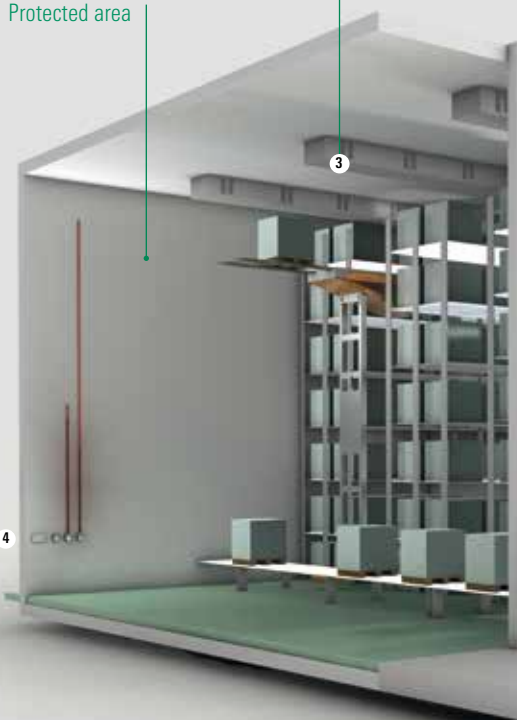
THE BENEFITS FOR YOU

- ✓ Preventive fire protection instead of loss adjustment after conventional extinguishing
- ✓ Active system = low risk of fire
- ✓ The rooms remain accessible to personnel
- ✓ No extinguishing = no impact on the goods, delivery capacity is maintained
- ✓ Comprehensive protection: Protection for buildings, goods, processes, people and the environment
- ✓ Full capacity utilization thanks to the space-saving system
- ✓ Flexible planning freedom: adaptable e.g. when extending or upgrading the building

Sample system

The nitrogen can be distributed by a **pipeline system** or via the **warehouse ventilation system**.

Protected area



Sensors positioned at different heights monitor the oxygen concentration and report this to the OxyControl centre.

The generated nitrogen is distributed in the protected area via a **pipeline system**.

The current oxygen values are shown on the **sector display**.

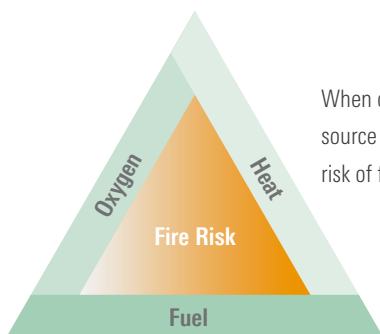
The required nitrogen is generated by an **OxyReduct® system**.

The **OxyControl centre** manages the entire fire prevention system.

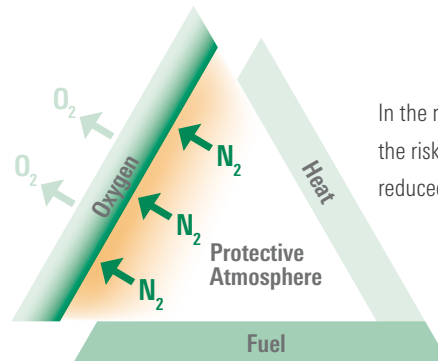
The OxyReduct® principle

LESS OXYGEN, MORE SAFETY.

Releasing nitrogen into the protected area lowers the oxygen concentration to a level just below the specified ignition threshold for the materials present. OxyReduct® thus creates a protective atmosphere where the risk of a fire breaking out can almost be ruled out completely.



When oxygen, heat and a fuel source come together, there is a risk of fire.



In the reduced-oxygen atmosphere, the risk of fire is significantly reduced by OxyReduct®.

Oxygen reduction via nitrogen

Using nitrogen as an inert gas has significant benefits:

- With 78.09 vol%, nitrogen is the main component of our normal ambient air.
- It can be generated on-site as required and does not need to be stored.
- Because nitrogen is non-toxic and free from pollutants, the protected area can be accessed by personnel.
- The physical properties of nitrogen guarantee a homogeneous distribution in the protected area.



Officially recognised solution,
proven hundreds of times
over

Ensuring fires can't start at
your premises: the active fire
prevention system
OxyReduct®.



S 6040001



Minimise risks successfully

INNOVATIVE FIRE PROTECTION SOLUTIONS.



KLM Logistik, Rheine / Germany



“We built the largest fully automated high-bay cold storage warehouse in Germany. The protection objective was very comprehensive. The resulting solution speaks for itself: In our high-bay cold storage warehouse, nothing can burn thanks to active fire prevention with oxygen reduction from WAGNER. Thanks to the high energy efficiency of the VPSA technology installed, we not only score points in term of safety, we also keep operation costs down.”

Georg Grewe, Managing Director of KLM Logistik



“Thanks to WAGNER, we have a fire prevention system that protects us optimally from the consequences of fire. We were particularly impressed by the active fire prevention concept. Sprinkler systems commonly used in the USA only react when fire has already broken out – but by then, it’s usually too late! The OxyReduct® system from WAGNER ensures that fire can’t break out and spread at all at our site.”

Burnie Taylor, General Manager Preferred Freezer



Preferred Freezer Services, Richland / USA



apetito, Rheine / Germany



EDNA, Brehna / Germany



“Our products and logistics processes are reliably protected with the active fire prevention. The new VPSA technology also saves operating costs – while still maintaining a high safety standard.”

Norbert Meitinger, Managing Director
EDNA International GmbH



Dr. Oetker, London (Ontario) / Canada

other projects in Germany (Wittenburg, Wittlich, Bielefeld and Moers) and Poland (Lebacz)



La Lorraine, Kladno / Czech Republic

additional project in Poland (Nowy Dwór Mazowiecki)



WAGNER sets standards for innovative and comprehensive solutions in fire protection: with very early fire detection systems, TITANUS® for aspirating smoke detection, FirExting® for fire-extinguishing, OxyReduct® to actively prevent fires from breaking out and VisuLAN® for hazard management. www.wagner.eu

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