

Trust your nose – ODOROX®



Trust your nose

Now there's a product for use in all your oxy-fuel applications that not only does everything you ask of it, it also safeguards your working environment. ODOROX® odorized oxygen from Linde Gas addresses the very real risk of fire or explosion by providing you with a clear warning smell if oxygen concentrations rise unintentionally. The ODOROX® concept, and the safety equipment you always carry with you – your nose – contributes to a safer working environment. With the release of the gas in cylinder form, the enhanced safety is now accessible to all industrial users of oxy-fuel applications, bringing the peace of mind that any leakage will be immediately noticeable.

Wherever there's oxy-fuel, there should be ODOROX®

Oxy-fuel applications are everywhere – offshore, in the metal industry, in automotive repair shops. Combustibility increases in the presence of oxygen in a concentrated state and this, coupled with the fact that the gas has neither smell nor colour, demands a high degree of caution. Linde Gas' proven commitment to safety improvements prompted the development of an innovative new concept – ODOROX® odorized oxygen – to complement existing safe practice by instantly alerting to gas leakage and unwanted oxygen enrichment. The need for such a solution was clear; around one in ten metal-working companies have experienced an incident related to excessive oxygen concentrations with circumstances varying from unpredictable leakage from hoses, valves or connections through to misuse.

The problem was already addressed by Linde Gas several years ago with the introduction of ODOROX® for odorization of supply lines for large scale usage. It was widely welcomed and Linde Gas pursued development of ready-made mixtures in cylinders.



ODOROX®

Just as the skunk uses its distinctive odour as a warning signal, so too ODOROX® odorized oxygen has a clearly detectable smell to warn of potential leaks and dangerous accumulations of gas.



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Information leak

Any leakage or misuse can easily result in a dangerous build-up of high oxygen concentrations. This can result in even non-flammable clothing catching fire. In other words, should there be an oxygen leak, you need to know about it before combustion occurs.

The ODOROX® concept

The beauty of the concept lies in its simplicity; if you can smell it, something is wrong. ODOROX® odorized oxygen contains small amounts of dimethyl sulphide (DMS) which, with its highly distinctive smell, will alert when the oxygen concentration rises by as little as 1%. Even when only 10 parts per million (ppm) of DMS have been added to the oxygen, the smell becomes noticeable in plenty of time to take protective action. The small quantity of DMS in oxygen has no impact on the performance of the oxy-fuel process nor on the working environment.

What's the risk?

Even though more than one in ten metal-working companies have experienced oxygen related accidents, it's forgivable to question the risk or to assume that it is less in certain situations. The fact is, however, that even working out of doors, or in a windy environment, oxygen accumulates readily in the fibres of fabric which could combust even much later. And in confined areas, it builds up, especially at floor level where sparks fall. There is a clear and present risk. There is also a solution.



An increase of just 3% from the ambient oxygen concentration of 21% doubles the combustion velocity. By the time this figure reaches 40%, the combustion velocity in contact with a spark or naked flame increases tenfold.

And because oxygen is somewhat denser than air, these increased concentrations can build up in dangerous pockets at floor level creating a marked increase in combustion velocity.



ODOROX® odorized oxygen is intended to enhance safety at the workplace and is not intended as a substitute for normal safe practice.

ODOROX® odorized oxygen – for an unmistakable warning of unwanted concentrations of oxygen. Available in cylinders, cylinder bundles as well as for large scale customers with supply lines.

Tried and tested

In certain pilot markets the solution has already been available for larger customers through odorization of the supply line as well as in cylinder form where it has enjoyed several years of success. Take-up of the product, with its clear safety benefit, clearly demonstrates an increasing awareness of the personal, social and economic implications of enhancing the safety of the working environment. Significantly, no accidents have occurred involving the use of ODOROX® odorized oxygen.



If you ever smell ODOROX® odorized oxygen it is a sign of leakage. Immediate appropriate action should be taken.



ODOROX®

The skunk, with its distinctive colouring and equally distinctive smell was chosen to represent ODOROX® odorized oxygen, a truly unique gas. This likeable black and white carnivorous mammal of the Mustelidae family – including stoats, weasels and badgers – defends itself when threatened

by ejecting a strong smelling fluid. Best known is the North American striped skunk, Mephitis mephitis, which lives in the woods on a diet of insects, mice and fruit. Advice given to anyone sprayed by skunk fluid frequently includes scrubbing with tomato juice.

ODOROX® is a registered trademark of Linde Gas AG.

At the front line of safety everywhere



The impressive take-up of ODOROX® odorized oxygen where it has been introduced on pilot markets in cylinder form has transcended all industry and application boundaries. It is the choice both of smaller-scale workshops and of large companies. Moreover, because of the marked safety implications, it is also widely recommended by several safety organizations.

ODOROX® odorized oxygen significantly enhances safety and complements existing safe practice in all oxy-fuel applications. It is intended for use in any industrial application where oxy-fuel would normally be used and is available in cylinders, cylinder bundles as well as for odorizing supply systems. The addition of small amounts of DMS in no way affects the performance, behaviour or shelf life of the oxygen. Instead it warns you unmistakably if there is an oxygen leak so you can immediately take appropriate action.

Offshore

Much of the oxy-fuel consumption in the offshore industry involves work out of doors. The open, well-ventilated environment is no guarantee that dangerous concentrations of oxygen cannot occur, however. In fact, the very openness of the working environment can lull the user into a false sense of security as leaking oxygen clings readily to the fibres of clothing where it can remain unnoticed for long periods.

Heating, plumbing and air-conditioning

Meeting tight deadlines, welding and cutting in confined spaces as well as operating in a wide variety of locations are all typical to this field. Without a dependable indicator, leakage of oxygen in such circumstances can quickly lead to the build up of dangerous concentrations of oxygen. ODOROX® odorized oxygen, in cylinders or cylinder bundles, is an invaluable complement to existing good safe practice.

Shipbuilding

Traditionally the shipbuilding environment involves large numbers of workers operating independently in confined and often remote or inaccessible parts of the ship's structure. These are clear indications of the advisability of using ODOROX® odorized oxygen to warn of hazardous situations.

Metal industry, engineering and automotive workshops

The area with perhaps the most diverse range of applications and working environments, many of them involving highly combustible materials. For these reasons there is a surprisingly high incidence of accidents with oxygen. The ready availability of ODOROX® odorized oxygen, therefore, with its unmistakable warning of leakage, greatly enhances the occupational safety of these environments.



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Competence. Where you need it.

Linde industrial gases are used in manufacturing, metallurgy, food processing, medicine, power and the environment. In each area, Linde complements your specific knowledge with an expertise and competence in gas technology that can bring lasting and concrete benefits.

Speaking your language and understanding your specific processes and concerns, Linde can make your gases work harder for you. We can offer know-how, customer-specific hardware and total gas handling. Linde and AGA have now combined their resources. To your advantage. Our local expertise is supported by a global network and database of applications knowledge.

With all of this at your service, it's not hard to turn the gas you use from a production cost into a productivity-enhancing investment.



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At your service.