WATER TREATMENT INDUSTRY

OUR PORTFOLIO

DL-19595-2015

The cleaning and treatment of fresh water and sewage is associated with hazards just as much as the maintenance of the sewage system itself: The presence of toxic or flammable gases and oxygen deficiencies are potentially risky. If you know the risks, you can control them and provide employees with reliable protection.

CLEAN WATER IS NOT A GIVEN. IT IS THE RESULT OF PAINSTAKING CLEANING PROCESSES. GUIDED BY PEOPLE.

The challenge

The water industry bears great responsibility. It has to deal with limited resources and contributes to the health of billions of people.

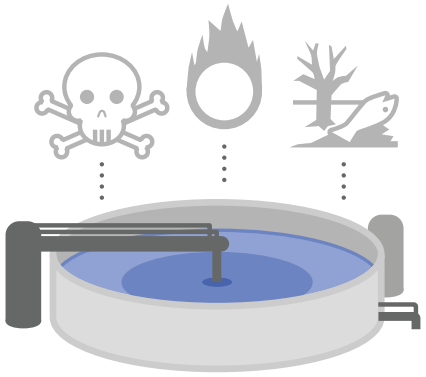
Despite all the technological progress, it is still people – employees of the water and sewage industry – who ensure that everything runs smoothly. This includes inspection patrols, cleaning and maintenance work, repairs and dismantling: despite careful risk analysis, there is always the potential of contact with hazardous substances, which can be dangerous or even fatal to health.

Employees who work supporting the ongoing cycle of water recovery, cleaning, supply or discharge pipes, as well as reprocessing and disposal of sewage sludge, must be given special protection to enable them to perform their jobs safely. If the risks cannot be permanently diminished via a ›safe system of work‹, a protection concept tailored to the specific activity is required. The concept will focus on the key aspects of gas detection, respiratory protection, personal protection and training.

Higher need for water treatment: The need for clean water will grow faster than the number of accessible clean water resources. Therefore, the demand for waste water treatment techniques will increase.

The risks

There are specific risks to staff and facilities in each stage of the water recovery and treatment process, which in particular include toxic gases, flammable gases and low oxygen levels.

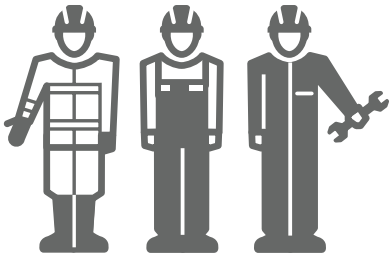


Water is disinfected in many water plants by adding chemicals.

Even today, working on water or sewage channels still requires manual visual inspection, fixing faults, maintenance and cleaning. A lack of ventilation combined with biological fermentation processes and chemical reactions encourage the accumulation of methane (CH_4) or even hydrogen sulphide (H_2S) at critical concentrations. CH_4 is extremely flammable and can react explosively. Even at very low concentrations, H_2S is extremely toxic to the human body.

There is also a range of chemical and biological reactions which can reduce the level of oxygen in breathable air and increase the risk of asphyxiation if workers are inadequately protected.

Furthermore, the chlorine used for water disinfection is derived from a highly noxious gas which, even in the smallest quantities, is harmful to the respiratory system.



The solution

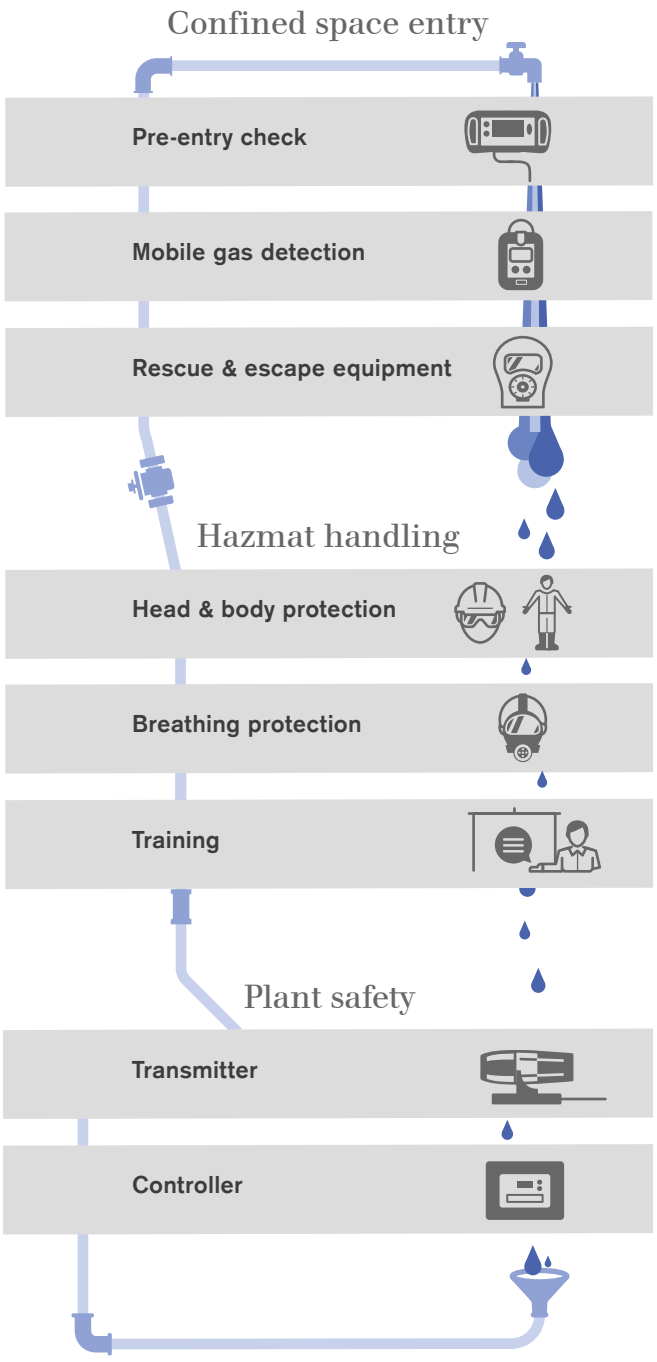
Dräger products and services support various application scenarios:

Recognising, analysing and assessing risks are important pre-conditions in order to develop solutions for work in confined spaces, handling hazardous substances, plant safety and emergencies.

The plant-specific hazard assessment provides a detailed list of risk factors for certain activities and areas of the plant. To find the right solution for every one of these stages of water purification and waste water handling is challenging.

Gas measuring devices with fast responding sensors, personal protective equipment such as respiratory protection with adequate filters and protection glasses as well as appropriate escape devices are needed. The right devices at the right time, at the right location can protect employees against upcoming hazards. The goal is to achieve a healthy balance between sufficient protection and minimal physical strain on workers to avoid the consequent restrictions on efficiency.

If you are faced with the challenge of procuring the best safety equipment for you and your employees, you can trust Dräger. Our product portfolio has an answer to the most diverse requirements of your working practice.



LACK OF VENTILATION, HAZARDOUS GASES, RESTRICTED ESCAPE OPTIONS – HAZARDS POSED BY CONFINED SPACES.

Working in confined spaces

The water industry is faced with a range of different confined spaces in which to work: treatment units, tanks, service reservoirs, chemical handling and storage areas, pumping stations, wells, sumps, overflows, boreholes, sewers and manholes. The most frequently occurring hazards are methane, hydrogen sulphide and a lack of oxygen.

Working in confined spaces, such as tanks, sewers, manholes, water towers, and sumps can be part and parcel of working within the water industry. However, it should never be regarded as a simple routine task because it often involves accumulated gases or low oxygen levels. This is why working in confined spaces should only be performed with the right safety equipment to protect your employees against upcoming risks.

Portable gas detection devices, respiratory protection and the use of emergency escape equipment ensure that your employees are able to do their work.

Workers in confined spaces must be able to rely on the personal gas-measurement instrument they are carrying and have confidence in their self-rescuer to feel safe whenever they are working.

Gas area monitoring and mobile gas detection devices

Dräger X-am® 8000

Clearance measurement was never this easy: The 1 to 7 gas detector detects toxic and flammable gases as well as vapors and oxygen all at once – either in pump or diffusion mode. Innovative supportive solutions like signalling design and CSE Connect ensure complete safety.

Dräger X-am® 2500

The Dräger X-am 2500 was specially developed for use as personal protection. This 1-to-4 gas detector reliably identifies combustible gases and vapors, as well as O_2, CO, NO_2, SO_2 and H_2S. Accurate and durable sensors provide a high degree of safety with extremely low operating costs.

Dräger X-am 1/2/5000 external pump

The Dräger X-am 1/2/5000 external pump for hose lengths of up to 30 meters. Makes it possible to use the detector for pre-entry measurements into confined spaces such as tanks, shafts, etc.


D-14288-2017


D-59024-2012


D-59043-2012

Respiratory protection and personal protective equipment

Dräger Panorama Nova®

The Panorama Nova respiratory mask meets the strictest requirements for protection efficiency, leak tightness and quality. Tried-and-tested over decades across the world, this full mask stands for completely dependable eye and respiratory tract protection.

Dräger PAS® Lite

For use in industrial applications where a simple, robust and easy-to-use breathing apparatus is required, the Dräger PAS® Lite self-contained compressed air breathing apparatus (SCBA) combines reliability with comfort and performance.


ST-2479-2003


D-17037-2010

WATER DISINFECTION, CHLORINATION AND DECHLORINATION REQUIRE THE CONTROLLED USE OF HAZARDOUS SUBSTANCES.

Plant Safety Operations

Employees working at the plant should be able to depend on a monitored workplace where risks are minimized as far as possible. The same applies to those living near a water management company.

Water treatment and wastewater disposal plants involve a wide array of process steps and plant structures. These all require particular orchestration to ensure the processes are performed smoothly and, most importantly, in a safe manner. Companies have a duty to ensure the lowest possible accident rate and design their processing and operating steps as efficiently as possible: As many alarms as are needed but with as few false alarms as possible – this is where the challenge lies. The main focus is on monitoring gas concentrations for: ozone (O_2), hydrogen peroxide (H_2O_2), sodium hypochlorite (NaClO) and chlorine dioxide (ClO_2) (used in water disinfection), hydrogen sulphide (H_2S) and methane (CH_4) occurring as wastewater residues; as well as hydrochloric acid (HCl) and sulphur dioxide (SO_2) (used in dechlorination).

Gas area monitoring is an ideal way of continually observing large work areas featuring a severe risk of explosion or toxicity.

Gas area monitoring

Dräger Polytron® 7000

The Dräger Polytron 7000 is a stationary gas detector that can satisfy all the requirements of toxic and oxygen gas measurement applications on a single platform. It meets industry-standard requirements as well as the high specification requirements of customised solutions.

Dräger PIR 7000

The Dräger PIR 7000 is an explosion-proof, optical infrared gas detector for continuously monitoring flammable gases and vapors. With its SS 316L stainless steel enclosure and drift-free optics, this detector is built to withstand the harshest industrial environments.

Dräger REGARD® 7000

The Dräger REGARD® 7000 is a highly expandable analysis system for monitoring various gases and vapors. It is suitable for gas warning systems with various levels of complexity and numbers of transmitters.


ST-2448-2003


ST-11665-2007


D-6806-2016

Personal Protective Equipment

Dräger X-am® 2500

The Dräger X-am 2500 was specially developed for use as personal protection. This 1-to-4 gas detector reliably identifies combustible gases and vapors, as well as O_2, CO, NO_2, SO_2 and H_2S. Accurate and durable sensors provide a high degree of safety with extremely low operating costs.

Dräger X-am® 5600

The Dräger X-am 5600 is a compact gas detection instrument for measuring up to 6 gases. Ideal for personal monitoring applications, this robust and water-tight detector provides accurate, reliable measurements of explosive, combustible and toxic gases and vapors as well as oxygen.

Dräger X-plore® 4700

The Dräger X-plore 4700 is a robust half mask which offers excellent comfort and an outstanding seal for demanding applications. Thanks to the wide range of filters available for protection against gases, vapors and particles, it is ideally suited for use in water treatment industry.


D-59024-2012


D-23636-2009


ST-975-2008

CHLORINE AND OZONE HAVE LONG BEEN USED TO PRODUCE CLEAN WATER. HOWEVER, THE RISKS THEY POSE CAN BE FATAL.

Handling hazardous substances

Chlorine and ozone require particularly careful handling, precise dosing, continual monitoring and reliable respiratory protection.

Using and preparing doses of chlorine and ozone in chemical disinfection processes pose an ongoing risk to those working in the water treatment industry. Depending on the concentration and accompanying conditions, they can lead to explosions, fires, poisoning and inhibit oxygen consumption. This is why the workplace exposure thresholds for ozone and chlorine are set very low. Chlorine gas containers are generally stored in a gas-tight chlorine chamber. Its surrounding air must be continually monitored by a stationary gas-measuring device.

D-8299-2018

Chemicals should only be stored, dosed and processed if there are special preventative measures in place. Gas-measuring devices and chemical protective suits are used to protect workers.

Respiratory protection

Dräger X-plore® 6300

The Dräger X-plore 6300 is an efficient yet low-cost full mask for price-conscious users not wishing to compromise on comfort or quality. It is the successor to the Dräger Panorama Nova®, a mask which has proven itself over decades – now redesigned and improved with an integrated bar code.

Dräger PSS® 3000

The Dräger PSS 3000 is a new generation of high-performance breathing apparatus. Combining comfort with modern pneumatic performance, it is designed for applications where simplicity and ease of use are essential. This breathing apparatus is lightweight yet robust, and easy to don.

ST-7497-2005

D-7469-2010

Personal protective equipment

Dräger X-am® 2500

The Dräger X-am 2500 was specially developed for use as personal protection. This 1-to-4 gas detector reliably identifies combustible gases and vapors, as well as O_2, CO, NO_2, SO_2 and H_2S. Accurate and durable sensors ensure a high degree of safety with extremely low operating costs.

Dräger Pac® 6500

The robust Dräger Pac® 6500 is your reliable companion under tough conditions. The personal single-gas detection device measures CO, H_2S, SO_2 or O_2 quickly and precisely. Quick sensor response times and a powerful battery also ensure safety.

Dräger X-plore® 3500

A perfect combination: modern design and light weight offer you extra safety and comfort. Dräger X-plore® 3500 is optimal for long lasting protection under tough conditions.

D-59024-2012

D-4986-2017

D-1526-2018

SELF-RESCUE IS ALWAYS THE FIRST CHOICE. THIS IS WHY ESCAPE HOODS AND SELF-RESCUERS SHOULD ALWAYS BE WITHIN REACH.

Emergency Escape


D-33005-2011

Only a couple of breaths of H_2S can be enough to inflict permanent injury or even cause death. In the event of an alarm, employees must first of all ensure that they are safe. They must be capable of rescuing themselves.

One of the greatest risks in the water/wastewater industry is the potential contact with hazardous substances. Life-threatening situations can arise at many workplaces in a water management plant. Always keeping escape equipment within reach helps the workforce get themselves to safety as soon as possible. The better staff is prepared for these types of emergencies, the better their reaction times in a real emergency. And it's a good thing too: if there are high levels of hydrogen sulphide, methane, or a lack of oxygen, saving a life can be a matter of seconds. Easy-to-operate oxygen self-rescuers that can be put on within seconds give workers up to 15 minutes time to reach a safe gathering point or rescue chamber.

Personal protective equipment and respiratory protection

Dräger Saver CF

The Dräger Saver CF hood escape device provides the wearer with a constant air supply via overpressure. It prevents any penetration of hazardous substances. The breathing air supply activates automatically if the device bag is opened. The hood is also ideal for workers with beards or glasses.

Dräger PARAT® 4290 NIOSH

The combined fire and industrial escape hood Dräger PARAT® 4290 was developed with users, placing the focus on the fastest possible escape. Optimized operation and wearing comfort, a robust housing and a NIOSH tested ABEK CO P3 filter ensure protection from toxic industrial and fire-related gases, vapors and particles for at least 15 minutes.

Dräger PAS® Colt

The Dräger PAS® Colt is a highly versatile breathing protection device featuring a modern design. Worn on the hip, this short-term/escape respiratory device is easy to put on. The compressed air cylinder can be unlatched and positioned in front of the body for entering and exiting confined spaces and containers.

D-12931-2010


D-3069-2014


ST-6118-2007

A TIP: REGULAR MAINTENANCE AND EFFICIENT SERVICING WILL KEEP YOUR EQUIPMENT IN TOP CONDITION.

Maintenance and service


D-6794-2014

The regular maintenance of technical safety products increases their durability and ensures that they function. If a task cannot be corrected in-house, then the Dräger service technicians offer advice and practical solutions.

Precise measuring results depend on the careful calibration of mobile gas detection devices with a suitable test gas. Self-contained breathing apparatus must be cleaned, disinfected, and serviced after each use. Reusable chemical protection suits may only be reused if they have been subjected to proper cleaning, disinfection and testing processes. For all of these processes, Dräger provides the necessary accessories, training, and supporting know-how.

Dräger and Dräger Channel Partner Services – more than you

Product Service

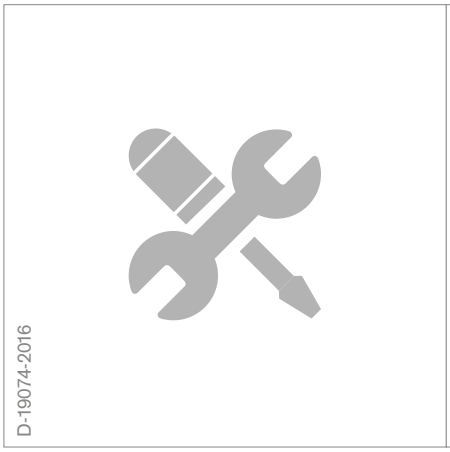
Product service solutions support you with a range of service packages – in our shops or on site in your plant. Care, servicing and maintenance are key factors when it comes to safety. Preventive checks, service procedures and original replacement parts make your investment last longer.

Rental Service

From bridging a temporary shortage of equipment to procuring special equipment for applications involving specific requirements: Rental service solutions with a broad range of rental equipment is an economical alternative to purchasing. Fast, straightforward and with a wide range of additional services available on request.

Training

The global Dräger Academy has imparted well-founded and practical knowledge for over 40 years. With over 110 authorized trainers worldwide and more than 600 available topics, we conduct more than 2,400 training sessions per year. We equip your employees with the knowledge required for real-life situations.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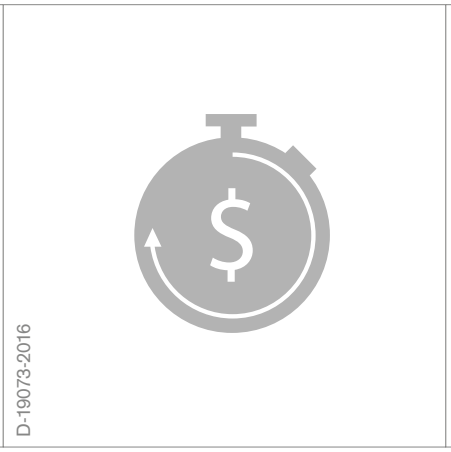
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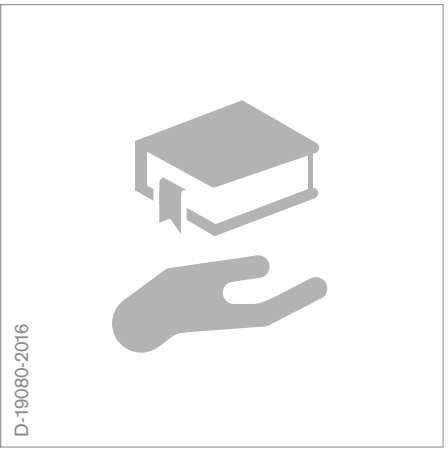
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