

Advanced Test Equipment Corp. www.atecorp.com 800-404-ATEC (2832)

Dräger



Portable gas detectors

Product overview



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What does 70 years in portable gas detection mean? A lot of experience!

When we started developing our first mobile gas detectors — the classic Dräger-Tube® gas testers — most miners used canary birds to test the atmosphere underground on oxygen deficiency. At that time we had already recognized what life saving gas detection is all about: the precise, reliable and multifunctional measurement of all harmful gases — not only oxygen. Be it toxic or explosive, today we have the right portable detection device for (nearly) all tasks.



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Mining is the historical origin of mobile gas detection.
Canary Birds were used to alarm miners on harmful oxygen defiency.

The application fields of our mobile gas detection devices are diverse as your daily work, no matter in which industry. Use it for personal workplace monitoring, clearance measurement of confined spaces, leakage detection, area monitoring and much more.

BROAD PORTFOLIO OF SENSORS

Our single and multi-gas detectors measure above 600 different gases and vapours. DrägerSensors® are characterised by fast response times to ease processes like clearance measurements.

EFFICIENT MAINTENANCE PROCESSES

Easy preparation for the next job: We support modern fleet management with fast and automated processes for quick test times.

QUALITY PAYS OFF

The high robustness and poison resistance as well as low cross-sensitivities are

valuable properties for investing in occupational safety. The longevity of the sensors reduce the cost of ownership. The proven Dräger-Tubes are calibration free with sustainable batch-monitoring.

PART OF DIGITAL TRANSFORMATION

By data exchange over the cloud our latest models like the Dräger X-am® 8000 shorten your work processes. The result: seamless job overviews, resulting in fast decisions and high working efficiency.

A FAMILY OF ITS OWN

Dräger gas detectors are a family of its own.

Own them or rent them – most important is, that you use them in daily work-life, for the safety of your staff. Get now familiar with our portfolio.

Dräger single-gas detectors We have the solution for your task

If the danger of toxic gases or vapours can be narrowed down to a single gas or leading substance, then single-gas measuring and warning devices are the ideal solution for personal monitoring in the workplace. They are small, robust, and ergonomic. These devices are usually attached to the work clothing near the breathing area, but do not limit the movement of workers.



4977-9017

Dräger Pac® 6000

- Disposable device up to two years for CO,
 H₂S, SO₂ or O₂
- Robust, quick sensor response times, powerful battery





Dräger Pac® 6500

- Non-disposable device for CO, H₂S, SO₂ or O₂
- Robust, quick sensor response times, powerful battery





Dräger Pac® 8000

- Non-disposable device for special gases like NO₂, O₃ or COCl₂
- Robust, quick sensor response times, powerful battery



Dräger Pac® 8500

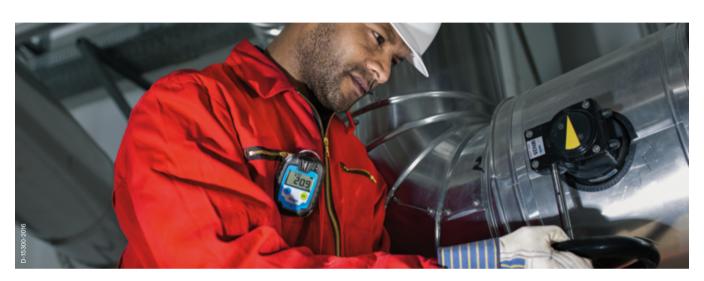
- Non-disposable device for hydrogencompensated CO sensor or dual sensor for H₂S/CO or O₂/CO
- Robust, quick sensor response times, powerful battery





Dräger X-am® 5100

- Robust, with a large display
- For highly reactive gases such as HF, HCl, $\rm H_2O_2$ and $\rm N_2H_4$
- Together with the Dräger X-zone 5500 it is also suitable for area monitoring



	Dräger Pac® 6000	Dräger Pac® 6500	Dräger Pac® 8000	Dräger Pac® 8500	Dräger X-am® 5100
Highlights					
Measurable gases	CO, O ₂ , H ₂ S, SO ₂	CO, O ₂ , H ₂ S, SO ₂	NO, CO ₂ , Cl ₂ , HCN, NH ₃ , PH ₃ , OV, OV-A, NO ₂ , Ozone, Phosgene	CO H ₂ ·CP, CO/H ₂ S, CO/O ₂ , H ₂ S/O ₂ , CO/HCN	H ₂ O ₂ , HF/HCL, Hydrazine
Technical data					
Temperature range (device)	-40°C to 55°C	-40°C to 55°C	-40°C to 55°C	-40°C to 55°C	-20°C to 50°C
Max battery service life (24/7)	2 years*	2 years*	2 years	1 year	
Rechargeable battery					•
Lifetime	2 years	Unlimited	Unlimited	Unlimited	Unlimited
Weight	106 g	106 g	106 g	106 g	220 g
System compatibility					
Bump test station	•	•	•	•	
Dräger X-dock®	•	•	•	•	
Dräger X-zone®					•
Features					
Changable filter	•	•	•	•	
D-light	•	•	•	•	
TLV / STEL / Peak	•	•	•	•	•
Datalogger	•	•	•	•	•
Dual sensor				•	

^{*}with O_2 sensor 1 year

Dräger multi-gas detectors The measured response to different hazards

Personal protection, area monitoring, confined space entry permits as well as safety measurements of shafts, channels or tanks are no problem with the new generation of Dräger X-am® devices. These portable gas detection instruments deliver reliable measurements, while durable sensors designed in-house ensure maximum safety coupled with extremely low operating costs.



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Dräger X-am® 2500

- 1 to 4 gas detection device
- Detection of flammable gases and vapours as well as O₂, CO, NO₂, SO₂ and H₂S
- Low weight and handy
- Useable with Dräger X-am pump for CSE





Dräger X-am® 3500

- 1 to 4 gas detection device
- Detection of flammable gases and vapours as well as O₂, CO, H₂S, NO₂ and SO₂
- With internal pump
- Especially developed for CSE, easy switch between diffusion and pump mode





Dräger X-am® 5000

- 1 to 5 gas detection device
- Ex-Tox-Ox detection of gases and organic vapours
- Low weight and handy
- Useable with Dräger X-am pump for CSE and with Dräger X-zone 5500 for area monitoring



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Dräger X-am® 5600

- 1 to 6 gas detection device
- Detection of explosive, flammable and toxic gases as well as vapours and oxygen
- Low weight and handy
- Useable with Dräger X-am pump for CSE and with Dräger X-zone 5500 for area monitoring



Dräger X-am® 8000

- 1 to 7 gas detection device
- Detection of toxic and combustible gases as well as vapours and oxygen
- Internal pump optional available
- Especially developed for CSE, easy switch between diffusion and pump mode
- Assistant functions and Bluetooth® available





Dräger X-am® Pump

- External pump
- Can be used with the gas detectors
 Dräger X-am 2500, 5000, 5600
- Pump starts automatically when connected to the gas detector



	Dräger X-am® 2500	Dräger X-am® 3500	Dräger X-am [®] 5000	Dräger X-am® 5600	Dräger X-am [®] 8000
Highlights					
Measurable gases	Ex (flammable gases, vapours), O ₂ , CO, NO ₂ , SO ₂ and H ₂ S	Ex (flammable gases, vapours), O ₂ , CO, H ₂ S, NO ₂ and SO ₂	Ex, O ₂ , CO, H ₂ S, NO ₂ , SO ₂ , (choice out of 43 sensors)	IR Ex/CO ₂ , O ₂ , CO, H ₂ S, NO ₂ , SO ₂ (choice out of 45 sensors)	Ex, O ₂ , CO, H ₂ S, NO ₂ , SO ₂ , VOC (PID) (choice out of 49 sensors)
Application area	PAM + CSE	CSE + PAM	PAM + CSE	PAM + CSE	CSE + PAM (+ Area Monitoring)
Technical Data					
Weight	220 g	550 g	220 g	220 g	495–600 g
Max number of gases	4	4	5	6	7
System Compatibility					
Dräger X-dock® Cal Station & Fleetmanagement	•	•	•	•	•
Bump test station	•		•	•	
Dräger X-zone® (area Monitor)			•	•	
Dräger X-am® Pump (external pump)	•		•	•	
Internal pump		•			optional
Features					
Colour display		•			•
Inductive charging		•			•
D-Light (compliance signal)		•			•
Bluetooth® "CSE Connect" mobile solution					•
Customer specific setttings via PC software CC Vision	•	•	•	•	•
Customer specific settings ex factory	•		•	•	•





D-806-2018

- Dräger X-pid® 9000/9500 Selective VOC gas detection
- For frequent testing of toxic and carcinogenic substances
- Laboratory quality results in very low concentrations
- Benzene measurement starting from 50 ppb
- No consumables per measurement

	Dräger X-pid® 9000	Dräger X-pid® 9500	Dräger X-pid® 8500 (only USA)
Highlights			
Target compounds (analysis mode)	Benzene, Butadiene	Benzene, Butadiene and 30+ other VOCs	Benzene, Butadiene and 30+ other VOCs
Extendable compound database		•	•
Total VOC measurement (seeker mode)	•	•	
Technical data (sensor unit)			
Temperature range	-10°C to 35°C	-10°C to 35°C	-10°C to 35°C
Weight	880 g (2 lb)	880 g (2 lb)	880 g (2 lb)
Degree of protection (IP class)	IP 54	IP 54	IP 54
Features			
Measurement technology	Gas chromatography + PID sensor	Gas chromatography + PID sensor	Gas chromatography + PID sensor
Internal pump (10 m probe attachable)	•	•	•
Internal fresh air in hazardous environment	•	•	•
Approval			
Ex approval zone (sensor unit)	Zone 0	Zone 0	Zone 0
Ex approval zone (control unit)	Zone 1	Zone 1	Zone 1
ATEX	•	•	•
IECEx	•	•	•
cCSAus	•	•	•





Dräger X-zone® 5500

- Area monitor
- In combination with the Dräger X-am® 5000, 5100 or 5600 gas measuring devices, it is suitable to measure 1 to 6 gases
- Limitless area monitoring thanks to fenceline of up to 25 devices

Dräger X-zone® 5500

Measured data information via SMS, Email and Cloud

Highlights	
Application area	Area monitoring
Technical data	
Operating time	Approx. 120 h (24 Ah battery)
Degree of protection (IP class)	IP 67
Weight	10 kg
System Compatibility	
Dräger X-am® 5000	•
Dräger X-am® 5100	•
Dräger X-am® 5600	•
Features	
Radio transmission	Worldwide license free-ISM frequencies
Radio transmission range	Robust and interference-free transmission up to 100 m
Gas entry	360°
Pump version available	•
Potential free relais contact	•
Data interface modbus	•

Dräger X-zone® Com

DrägerSensors®

Precise. Long-lasting. Proven quality

Whether electrochemical, catalytical, infrared or PID – sensors from Dräger have always been leading-edge technology worldwide. All our sensors are produced under clean room conditions and are individually tested prior to shipping. DrägerSensors have been proven worldwide under hostile ambient conditions such as in mining, on offshore drilling rigs, in refineries and in chemical plants.



DrägerSensor® XXS

- Electrochemical sensor
- Monitoring of toxic gases and lack of oxygen
- Compatible with: Dräger Pac series and Dräger X-am family
- Measuring range: in vol.-% and ppm



DrägerSensor® XS (HF/HCI, H₂O₂, N₂H₄)

- Electrochemical sensor
- Monitoring of toxic gases
- Compatible with Dräger X-am 5100
- Measuring range: in ppm



Dräger Catalytic Ex-Sensors

- Monitoring of flammable gases and vapours
- High poisoning resistance to silicones and H₂S
- Compatible with: Dräger X-am family
- Measuring range: lower explosion limit and 100 vol.-% $\mathrm{CH_4}$



Dräger Infrared Sensors

- Monitoring of flammable gases and vapours
- Ideal for measuring hydrocarbons in an inert atmosphere
- No poisoning effect due to technology
- Compatible with: Dräger X-am 5600/8000
- Measuring range: lower explosion limit and 100 vol.-% CH₄, for CO₂ 0–5 vol.-% and 100 vol.-%



Dräger PID Sensors

- Detection of volatile organic compounds in low concentrations
- Compatible with: Dräger X-am 8000 selective benzene measurement with pre-tubes possible
- Measuring range: from ppm to ppb



	DrägerSensor® XXS	DrägerSensor® XS (HF/HCI, H ₂ O ₂ , N ₂ H ₄)	Dräger Catalytic Ex Sensors	Dräger Infrared Sensors	Dräger PID sensors
Measurement technology	Electrochemical	Electrochemical	Catalytic bead	Infrared	Photo ionization
Used in device	Single gas: Dräger Pac® 6x00/8x00 Multi gas: Dräger X-am® 2500/5000/5600 Dräger X-am® 3500/8000	Single gas: Dräger X-am® 5100	Multi gas: Dräger X-am® 2500/5000 Dräger X-am® 3500/8000	Multi gas: Dräger X-am® 5600 Dräger X-am® 8000	Multi gas: Dräger X-am [®] 8000
Aplication					
Ex			•	•	
Ox	•				
Tox	•	•			•
Carcinogenic	●1	● 2			•

¹OV sensors

 $^{^{2}}N_{2}H_{4}$

Calibration and bump testing More efficiency in daily routine

Especially in shutdown and turnaround scenarios and all other cases a high use frequency of mobile gas detectors is given, a fluent maintenance chain is most important. Our calibration and bump test tools lighten your work and speed up your work processes. All data can be exported and analysed by the Dräger X-dock® Manager.



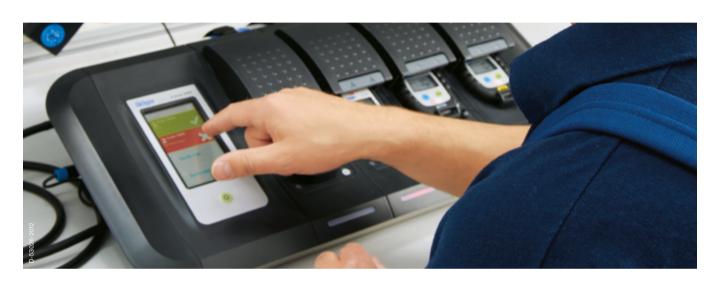
Dräger Bump test station

- Function tests with test gas cylinder
- Does not need power for operation
- Dräger Pac Series and Dräger X-am 2/5X00 are supported



Dräger X-dock® 5300/6300/6600

- Automatic bump tests and calibrations
- Reduced test gas consumption, short testing times
- Quick test in under 10 seconds in some cases
- Available in a wide variety of versions
- Dräger Pac and Dräger X-am series are supported
- Stores data; more detailed data via Dräger X-dock Manager



	Dräger Bump test station	Dräger X-dock® 5300	Dräger X-dock® 6300	Dräger X-dock® 6600
Highlights				
Gas inlets	1	3	3	6
Gas flow	0,5 I/min	0,3 I/min	0,3 I/min	0,3 I/min
Max. number of connected modules		1	10 *1	10 *1
Technical Data				
Ethernet connection		•	•	•
Power supply	No power required	12 V / 100–240 V	12 V / 100–240 V	12 V / 100–240 V
System compatibility				
Dräger Pac® 6x00 / 8x00	•	•	•	•
Dräger X-am® 2500 / 5000 / 5600	•	•	•	•
Dräger X-am® 3500 / 8000		•	•	•
Dräger X-dock® Manager		•	•	•
Features				
Colour touch screen		•	•	•
Automated configuration of devices		•	•	•
Documentation of testing		•	•	•
Bump tests	•	•	•	•
Span calibration	● *2	•	•	•
Printer support (e.g creation of test certificates)		•	•	•
Reports / Fleet management		With Dräger X-dock® manager	With Dräger X-dock® manager	With Dräger X-dock® manager

 $^{^{\}star 1}$ Maximum five Dräger X-am® 8000 modules $^{\star 2}$ Optional after failed test

Dräger-Tubes®

Measuring accuracy with long tradition

As a market leader for more than seventy years, Dräger has perfected the "laboratory behind glass". Dräger-Tubes® provide a quick and inexpensive method of detecting gases, vapors and aerosols in the air, water and soil. Dräger is also constantly at the forefront of the development of new tubes.



Dräger Short-term Tubes

- Gas detection of more than 500 different gases
- Tubes have already been calibrated
- Can be used with Dräger-Tube® pump accuro and X-act 5000



Dräger Diffusion Tubes

- No pump required
- Diffusion process transports the contaminant molecules



Dräger Sampling Tubes

- Analysis of the sample in a laboratory
- Measurement of complex compounds and mixtures of substances possible



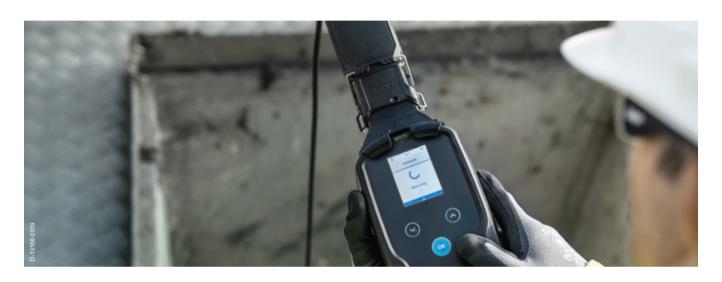
Dräger X-act® 5000 Basic

- Automatic tube pump
- For a high number of strokes, ideal for sampling tubes
- Display for clear readability of tube information
- Can be used in explosive areas



Dräger accuro®

- Manual tube pump
- For spot measurements with a limited number of strokes
- Integrated stroke counter for safe control
- Easy to operate with one hand
- Can be used in explosive areas





- Dräger X-act® 7000

 MicroTubes and analyser

- Lab quality measurement in ppb range
 Easy to use; pre-calibrated MicroTubes
 With coupler and X-am pump suitable for CSE

Dräger X-act® 7000

Highlights			
Measurable gases	Different gases and vapours		
Application area	PAM /Leak/CSE		
Technical data			
Temperature range (device)	0°C to 40°C		
Ex approval	Zone 0		
Degree of protection (IP class)	IP 54		
Sensor technology	CMOS Sensor Optic und LED Light		
Storage of all relavant data	RFID tag		
System compatibility			
Dräger X-am® pump	•		
Probes and hoses	•		
Features			
Pre-calibrated MicroTubes	•		
Automatically MicroTube transport	•		





Dräger DLE-Set

ST-1354-2004

- Air extraction method with Dräger-Tubes
- Rapid analysis of water, waste water, oil sludge, soil and multi-phase samples



Dräger Simultaneous Test Set

- Parallel measurement of five gases
- Air is simultaneously drawn with Dräger-Tube pump
- For different combinations of organic and inorganic gases
- Several different simultaneous test sets available



Dräger Fumigation Test Set

- Tubes set
- Checking for the presence of fumigation agents
- For formaldehyde, methyl bromide, hydrogen phosphorous and sulphuryl fluoride





Dräger Aerotest

- Several systems available
- Analyses of pressure gases, e.g breathing air, medical gases or CO₂

 - For checking compressors, piping, airplanes etc.

	Dräger Aerotest Alpha	Dräger Aerotest 5000	Dräger Multitest med Int.a	Dräger Simultan- test CO ₂	Dräger Aerotest Simultan HP	Dräger Aerotest Navy
Substance						
Carbon dioxide	•	•	•		•	•
Carbon monoxide	•	•	•	•	•	•
Water vapour	•	•	•	•	•	•
Oil	•	•	•		•	•
Nitrous fumes			•	•		
Sulphur dioxide			•	•		
Ammonia				•		
Phosphine				•		
Hydrogen sulphide			•	•		
Oxygen 5%						•

Dräger Software Analysis and documentation of data

Dräger Software allows you to take a deep dive into your measurement results. So you may identify faults at once and benchmark historic values. Another gain: Save time by ordering and prioritization of all measurement tasks of the day remotely from the specific measuring site. Data transfer can be done by cloud.



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Dräger X-dock® Manager

- Asset management software for gas detectors
- Tracking of different intervals
- Producing test documentation and statistics reports
- Two different licenses available





Dräger CC-Vision Basic

- Software for professional configuration and calibration
- Documentation of calibration results
- Useable with Dräger Pac family, X-am series,
 X-zone 5500 and X-act 7000
- Free of charge



Dräger GasVision

- Data analysis software for data loggers
- Regards real time measurements
- Within the Dräger Pac and X-am series



Dräger Gas Detection Training App

- Supports realistic training and instruction
- Compatible with Pac® and X-am® series
- For IOS and Android
- Free of charge



Dräger Tubes App

- Record, archive and evaluate tube measurements
- Forwarding of data possible
- For IOS and Android
- Free of charge

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Dräger CSE Connect

- Software solution
- Digitises the clearance measurement process
- Data exchange between Dräger X-am 8000, smartphone and web application
- Data transfer can be done by cloud
- Helps to manage the measurement orders more efficiently and cost-effectively

Dräger CSE Connect

Software-as-a-Service (SaaS)
system

Application area

Highlights

Technical data

Components

Installation

Supported browser

Supported app stores

Backend

Encryption

Data center

Service

24/7 service hotline

Unlimited data storage

Software upgrades (new features)

Bug fixing

Patches

Real-time information through cloud-based software, data storage and data availablilty

Confined space entry and general gas measurements

Web application (access via browser) and smartphone app

No installation needed

Google Chrome, Mozilla Firefox, Microsoft Edge

iTunes Store (IOS), Google PlayStore (Android), Dräger App Store

Microsoft Azure Cloud

HTTPS, TLS 1.2

Data is stored in the EU (GDPR applies)

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Dräger Services Added value for daily business

Different service areas for added value — several reasons to go with us. You'll get to know our unique capabilities well before your buying decision and we'll stay by your side over the whole service lifecycle of your Dräger products. That's our promise to you. Just try it out:



Product Service – versatile, far ahead and affordable

One product service offer fits all? Far from it! Our product service is more than just a manufacturer offer to maintain your products. We have a wide portfolio of contract options, with part or full maintenance agreements. So it's up to you to decide how much support you need.

Our differentiated product service portfolio for the safety segments applies to your budget situation and the legal compliances that must be met in your business. Our product service offers never sleep – they are always up to date.



Rental Service – up to date, available and efficient

Rent instead of buy – this could be a smart option for you in some cases, like short-term high demands for safety technology during shutdowns. Or if you make a point of using safety equipment that's always state-of-the-art, such as renting the latest generation of cloud-connected gas detectors.

With more than 200,000 rental devices and 18 rental hubs all over the world our rental service meets your individual demands in a cost-effective way. Our seamless logistic network always delivers your order in time. So everything works smoothly.



On-site & Shutdown Safety Services – No compromises

Every shutdown and every new standard maintenance project at your site have its own safety implications. To have all those safety issues in sight is often a task your safety managers cannot bear alone. No matter how well your team works, it's always a good idea to get fresh input from the outside, even if only to help identify space for improvement.

We offer you long-term, on-site safety services as well as short-term shutdown safety services, including safety staffing, Safety Shop, Rental Robot, consultancy and CSE monitoring.



Training – attentive, inclusive and forward-thinking

Our trainers are always happy to share their knowledge. Every dialogue with you, our customers, brings us forward together. Most Dräger instructors have worked in your industries for many years. So they really know what you mean when you're reporting on your work life.

Depending on the topic, we combine traditional classroom training with practical exercises, realistic simulations and web-based online elements. We carry out more than 2,400 trainings annually and have more than 600 different training topics on offer.



Dräger VOICE The hazmat-based safety product finder

The new Dräger VOICE provides you with basic information on

important hazardous substances and the related safety solutions.



YOU KNOW WHAT

You know best which hazardous substance is present in your daily work. That's why you simply type in your requested substance and Dräger VOICE supports you with vital information to more than 1,500 hazardous substances, about their physiochemical characteristics and relevant limit values right away.



WE KNOW HOW

Based on the entered hazmat the Dräger VOICE online-tool knows how to protect you and your team properly. It recommends suitable respiratory and body protection equipment as well as appropriate gas detection solutions in real time.



EXPERT KNOWLEDGE TO GO

Dräger VOICE provides a quick navigation through our safety portfolio and works with almost any device. It is an essential tool for all people looking for expert knowledge on safe handling of hazmats. At the same time it is meant as an invitation to get in touch with Dräger, to customize the recommendation to your personal needs.

Hazmat expert knowledge for you – try it yourself! www.draeger.com/VOICE



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