Dräger

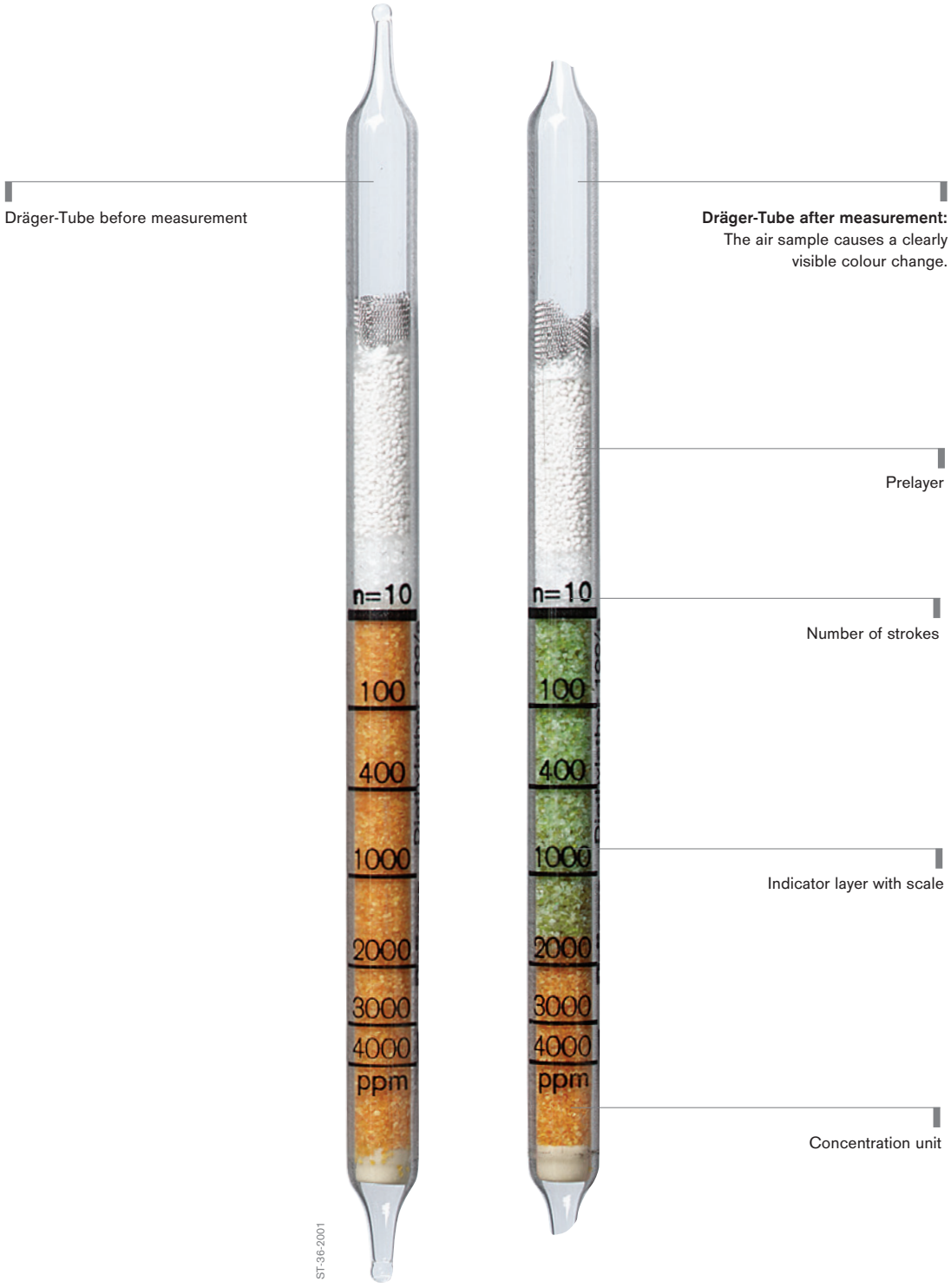
D-8774-2009

A laboratory behind glass

DRÄGER-TUBES

Dräger. Technology for Life®

ST-4584-2005



The Dräger-Tubes are an extremely cost-effective and, above all, reliable method of measurement. Dräger-Tubes have proved themselves a million times over and are used all over the world.

Dräger-Tubes – a success story.

Dräger-Tubes are the best example for a short-term gas measurement system – and not without good reason, for over seven decades, Dräger, the leading tube manufacturer, has perfected its “laboratory behind glass”; and the more than 100 million tubes sold in the last ten years are testimony to the satisfaction of our customers.

Today, Dräger-Tubes represent one of the classic forms of gas analysis. These versatile tubes make possible countless applications in industry, firefighting, disaster prevention, laboratory work, environmental protection and many other areas which require measurement results to be instantly available so that decisions can be made.

Especially in applications in which individual measurements or low measurement frequencies are sufficient, Dräger-Tubes have advantages compared to electronic measurement equipment. They are comparatively inexpensive to purchase and very easy to use.

Dräger-Tubes provide results immediately after measurement, so there is no need to send samples into a lab for analysis. There is also no need for calibration by the user – the calibration is shown in the form of a scale printed on the tube.

Currently, more than 220 short-term tubes are available for measuring up to 500 gases, and the number is growing year by year. New and more sensitive tubes are developed to meet changing environmental conditions, new legal regulations, falling limit values and special customer requirements. As far as new gases are concerned, the measurement system plays a pioneering role, and Dräger Safety is a trend-setter when it comes to developing new – even customer-specific – tubes.

THE FUNCTIONAL PRINCIPLE IS AMAZINGLY SIMPLE

The Dräger-Tube, a sealed glass vial, contains on a solid carrier material a chemical reagent which reacts to a particular gas or vapour with a characteristic colour change. To cause this reaction, a defined volume of ambient air is drawn through the tube using a Dräger-Tube pump. Even small quantities of gas are sufficient, and the user can easily read and analyse the result because of the scale marks printed on the tube.

A BESTSELLER WITH GOOD REASON

Dräger-Tubes

- deliver a fast and reliable measurement result
- are easy to use, even with safety gloves
- are ideal for spot measurements
- perform their measurements without any power supply
- require no calibration prior to measurement
- offer an impressive level of cost effectiveness

DRÄGER VOICE: FOR MORE DETAILED INFORMATION

You can find everything you ever wanted to know about hazardous substances at

www.draeger-safety.com/voice.

Our Dräger VOICE database contains information about more than 1,600 hazardous substances. In addition, Dräger Safety products that are suitable for measuring and protecting against specific hazardous substances are recommended. Once you have registered – which is quick and free of charge – you can take advantage of this online service at any time, day or night.

KNOWLEDGE IN COMPACT FORM

The Dräger-Tubes/CMS handbook is designed to keep you up-to-date with the latest technology and information. It provides a complete overview of all available tubes and systems, their respective applications, and accessories.

Take advantage of our know-how. The range of services we offer – technical applications-related advice, seminars, measurements and analysis, and production of customer-specific tubes – goes far beyond a mere product portfolio.

D-29939-2010

ST-1404-2005

Our Dräger-Tube pumps: making measurements a breeze.

Together with the Dräger short-term tubes, these pumps make the perfect team. Whether you choose a manual one-hand pump for single measurements or an automatic pump – what sets Dräger-Tube pumps apart is the fact that they are robust, highly accurate, very low-maintenance, ready for use quickly and easy to handle.

DRÄGER-TUBE PUMP ACCURO

Handy, reliable, tried and tested a million times over: the Dräger accuro. Because this one-hand pump works without a power supply, it can be used anywhere including potentially explosive areas.* The sturdy and robust accuro pump can be easily operated using only one hand and is therefore suitable for conducting measurements at places which are difficult to access. The end of each stroke is clearly indicated.

ST-2436-2003

Dräger accuro®
Handy, reliable and tried and tested a million times over

D-12091-2010

Dräger X-act® 5000
Achieves the correct number of strokes automatically

AUTOMATIC TUBE PUMP DRÄGER X-ACT 5000

The Dräger X-act 5000 is the new IS approved Dräger-Tube pump. It is designed for measurement with Dräger short-term tubes and sampling tubes or systems. Ease of operation is based on the intuitive menu navigation of the different operating modes and the intelligent pump control using electronics and software. One of the key principles, is the ability to provide the required flow characteristics of the Dräger short-term tubes, reducing the average measurement time of Dräger short-term tubes that require a higher number of strokes. A barcode printed on the label on the back of a Dräger short-term tube box contains all relevant measurement parameters. Simply sliding the barcode over the barcode reader of the pump automatically transfers the name of the substance to be measured, the number of strokes, and the measuring range to the display. For measurements in technical gases, the properties of the technical gases, must be taken into consideration when evaluating the Dräger short-term tubes. Following the operating steps in the mode "Measurement in Technical Gases", the Dräger X-act 5000 will automatically adjust to the required flow parameter and the measurement result can be read directly. The required parameters for the sample taking can be set directly, without the need for an external flowmeter or a stopwatch.

The Dräger X-act 5000 automatically adjusts the flowrate. After setting the sampling time, the pump can immediately be started. At the end of the measurement the pump will stop automatically. The set data, the elapsed time and the pumped volume will be indicated on the display.

Barcode reader
The Dräger X-act® 5000 has a built-in barcode reader which emits an invisible laser beam during normal operation. The Dräger X-act® 5000 is a Class 1M LASER Product with Class 3R internal radiation per the requirements of IEC 60825-1.
INVISIBLE LASER RADIATION • DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS • CLASS 1M LASER PRODUCT
Viewing the laser output with certain optical instruments (for example, eye loupes, magnifiers and microscopes) within a distance of 100 mm may pose an eye hazard.

* Except in conjunction with the following Dräger-Tubes: Halogenated Hydrocarbons 100/a, Oxygen 5%/B, Oxygen 5%/C, Carbon Disulphide 5/a, Sulphuryl Fluoride 1/a, Hydrogen 0.2%/a, Hydrogen 0.5%/a.


ST-1962-2003


ST-4527-2005

Prepared for every eventuality with the right accessories.

Intelligent accessories ensure that you can perform reliable measurements, even under extreme conditions. With our proven solutions, you could not be better prepared for any application.

A PERFECT FIT: THE EXTENSION HOSE

For measurements at difficult to reach areas, such as ducts, shafts or tanks, extension hoses of up to 15 meters (49 feet) length for the Dräger accuro and up to 30 meters (98 feet) length for the Dräger X-act 5000 are available. The extension hose is fitted with a tube holder at the free end of the hose. This means that measurements are possible without flushing of the dead volume of the hose.

NO TEMPERATURE TOO HIGH: THE HOT-AIR PROBE

The hot-air probe allows you to measure extremely hot gases, e.g. in combustion plants. This probe needs to be used whenever the temperature range indicated in the instructions for use for the particular Dräger-Tube is exceeded. The probe, which is connected by a rubber hose to the tube, cools the gas to temperatures below 50 °C (122 °F).

CUTTING EDGE: THE DRÄGER TO 7000

No bigger than a pencil sharpener, the Dräger TO 7000 opens the glass tip so cleanly that no jagged edges remain on the tube. Simply insert the tube, twist it, and you are ready for measurement. With the white measurement scale printed on the Dräger TO 7000, you have a light background for easy readability.

WARMTH WITHOUT POWER: THE HOT-PACK HOLDER

Freezing temperatures down to -20 °C (-4 °F) are no problem for the “tube warmer”, which requires no electrical power supply. The Dräger Hot-Pack Holder allows Dräger-Tubes to be used even at ambient temperatures below the limits stated in the instructions for use. Extremely cost effective (the tube warmers can be used several hundred times) and easy to use, the Dräger Hot-Pack Holder is the ideal companion when working at below freezing temperatures.


ST-1990-2005

Dräger TO 7000
For safe and easy opening of your Dräger-Tubes


ST-1374-2004

Hot-Pack Holder for Dräger-Tubes
For measurements even at below-zero temperatures

ST-5933-2004


ST-6052-2004

We‘ve done the packing for you: complete Aerotest Systems and Simultaneous Test

Dräger Safety has developed a range of measurement systems to meet the requirements of your different applications, and put them together as complete sets. The Dräger-Tube kits deliver fast and efficient results.


ST-1179-2008

Dräger Aerotest systems

CHECKING AIR QUALITY WITH DRÄGER AEROTEST SYSTEMS

Every day, fire brigade, healthcare and diving professionals rely on compressed air analysis from Dräger Safety. With more than 100 years of experience in this area, we provide measurement technology at the highest level. Our Dräger Aerotest family helps to ensure maximum safety during the measurement of compressed gases.

The Dräger Aerotest system is used to check the quality of the air we breathe. Before compressed air can be used as breathing air, it must meet rigorous quality requirements such as those contained in the EN 12 021 standard and the European Pharmacopoeia. Specially calibrated Dräger-Tubes and the Dräger Aerotest can be used to detect typical impurities in compressed breathing air quickly and reliably, e.g. CO, CO_2, humidity and oil. Besides breathing air, oxygen and carbon dioxide can also be analysed in no time at all for purity or for compliance with specific regulations. The Dräger Aerotest Simultaneous Test allows parallel measurement of up to seven different contaminants, with results available in just five minutes. The Dräger Aerotest Simultaneous Test is compact in design and can be connected to standard compressors, compressed air lines and cylinders using standard tools.

A wide selection of Aerotest systems is available for checking compressed gases for purity. We have put the sets together for you in a handy case.

ST-1670-2004

DRÄGER SIMULTANEOUS TEST SETS SAVE VALUABLE TIME IN HAZARDOUS SITUATIONS

Before you can take specific action to protect personnel and property, you need specific information about the hazard. Air contamination, e.g. from hazardous waste sites, fires, chemical or transport accidents, poses particular challenges. Whenever it is important for you to track down every conceivable potential gas hazard as quickly as possible, the Dräger Simultaneous Test Sets are multi-gas detectors which provide a fast basis for reliable decision-making – right on-site.

Dräger Simultaneous Test Sets comprise five Dräger-Tubes arranged in parallel in a rubber sleeve. Via an adapter, the air to be tested is drawn through all the tubes simultaneously using the gas detector pump. The concentration of gases to be measured can be seen from markings on the tubes, which range from “non-hazardous” to “extremely hazardous”. We have developed three Simultaneous Test Sets for specialized applications such as fires or accidents involving hazardous goods transports: the Dräger Simultaneous Test Sets I and II for the measurement of inorganic fumes, and set III for the measurement of organic vapours. In addition, there are six other Dräger Simultaneous Test Sets available in conjunction with an adapter and the Dräger-Tube pump for all kinds of different applications.

We are happy to advise and assist you with working out specific measurement strategies and putting together individual Simultaneous Test Sets to suit your needs.

ST-1362-2004

Dräger Simultaneous Test Set
Parallel measurement of five gases

2-925-91

ALL DRÄGER-TUBES AT A GLANCE.

Dräger-Tubes		Standard Range of Measurement (20 °C (68 °F), 1,013 hPa)	Measurement Time (min.)	Order Code
Acetaldehyde 100/a		100 – 1,000 ppm	5	67 26 665
Acetic Acid 5/a		5 – 80 ppm	30 s	67 22 101
Acetone 40/a (5)		40 – 800 ppm	1	81 03 381
Acetone 100/b		100 – 12,000 ppm	4	CH 22 901
Acid Test		qualitative	3 s	81 01 121
Acrylonitrile 0.5/a (5)		1 – 20 ppm 0.5 – 10 ppm	2 4	67 28 591
Acrylonitrile 5/b		5 – 30 ppm	30 s	CH 26 901
Activation tube for use in conjunction with Formaldehyde 0.2/a tube				81 01 141
Alcohol 25/a	– n-Butanol – Ethanol – Methanol – i-Propanol	100 – 5,000 ppm 25 – 2,000 ppm 25 – 5,000 ppm 50 – 4,000 ppm	5	81 01 631
Alcohol 100/a		100 – 3,000 ppm	1.5	CH 29 701
Amine-Test		qualitative	5 s	81 01 061
Ammonia 0.25/a		0.25 – 3 ppm	1	81 01 711
Ammonia 2/a		2 – 30 ppm	1	67 33 231
Ammonia 5/a		5 – 70 ppm 50 – 700 ppm	1 6 s	CH 20 501
Ammonia 5/b		5 – 100 ppm	10 s	81 01 941
Ammonia 0.5 %/a		0.5 – 10 Vol.-%	20 s	CH 31 901
Aniline 0.5/a		0.5 – 10 ppm	4	67 33 171
Aniline 5/a		1 – 20 ppm	3	CH 20 401
Arsine 0.05/a		0.05 – 3 ppm	6	CH 25 001
Benzene 0.25/a		0.25 – 2 ppm 2 – 10 ppm	5 1	81 03 691
Benzene 1/a		1 ppm	3	81 03 641
Benzene 2/a (5)		2 – 60 ppm	8	81 01 231
Benzene 5/a		5 – 40 ppm	3	67 18 801
Benzene 5/b		5 – 50 ppm	8	67 28 071
BTX (Toluene 5/b)		50 – 300 ppm	1	81 01 661
Carbon Dioxide 100/a		100 – 3,000 ppm	4	81 01 811
Carbon Dioxide 0.1 %/a		0.5 – 6 Vol.-% 0.1 – 1.2 Vol.-%	30 s 2.5	CH 23 501
Carbon Dioxide 0.5 %/a		0.5 – 10 Vol.-%	30 s	CH 31 401
Carbon Dioxide 1 %/a		1 – 20 Vol.-%	30 s	CH 25 101
Carbon Dioxide 5 %/A		5 – 60 Vol.-%	2	CH 20 301
Carbon Disulphide 3/a		3 – 95 ppm	2	81 01 891
Carbon Disulphide 5/a		5 – 60 ppm	3	67 28 351
Carbon Disulphide 30/a		0.1 – 10 mg/L	1	CH 23 201
Carbon Monoxide 2/a		2 – 60 ppm	4	67 33 051
Carbon Monoxide 5/c		100 – 700 ppm 5 – 150 ppm	30 s 2.5	CH 25 601
Carbon Monoxide 8/a		8 – 150 ppm	2	CH 19 701
Carbon Monoxide 10/b		100 – 3,000 ppm 10 – 300 ppm	20 s 4	CH 20 601
Carbon Monoxide 0.3 %/b		0.3 – 7 Vol.-%	30 s	CH 29 901

Dräger-Tubes	Standard Range of Measurement (20 °C (68 °F), 1,013 hPa)	Measurement Time (min.)	Order Code
Carbon Monoxide 0.3 %/b	0.3 – 7 Vol.-%	30 s	CH 29 901
Respiratory CO Test Kit (5)			CH 00 270
Carbon Tetrachloride 0.1/a	0.1 – 5 ppm	2.5	81 03 501
Carbon Tetrachloride 1/a	1 – 15 ppm	6	81 01 021
Chlorine 0.2/a	0.2 – 3 ppm 3 – 30 ppm	3 30 s	CH24 301
Chlorine 0.3/b	0.3 – 5 ppm	8	67 28 411
Chlorine 50/a	50 – 500 ppm	20 s	CH 20 701
Chlorine Dioxide 0.025/a specific	0.025 – 0,1 ppm 0,1 – 1 ppm	7.5 2.5	81 03 491
Chlorobenzene 5/a (5)	5 – 200 ppm	3	67 28 761
Chloroform 2/a (5)	2 – 10 ppm	9	67 28 861
Chloroformates 0.2/b	0.2 – 10 ppm	3	67 18 601
Chloroprene 5/a	5 – 60 ppm	3	67 18 901
Chloropicrine 0.1/a	0.1 – 2 ppm	7.5	81 03 421
Chromic Acid 0.1/a (9)	0.1 – 0.5 mg/m^3	8	67 28 681
Cyanide 2/a	2 – 15 mg/m^3	2	67 28 791
Cyanogen Chloride 0.25/a	0.25 – 5 ppm	5	CH 19 801
Cyclohexane 40/a	40 – 200 ppm 300 – 3,000 ppm	75 s 15 s	81 03 671
Cyclohexylamine 2/a	2 – 30 ppm	4	67 28 931
Diesel Fuel	25 – 200 mg/m^3	30 s	81 03 475
Diethyl Ether 100/a	100 – 4,000 ppm	3	67 30 501
Dimethyl Formamide 10/b	10 – 40 ppm	3	67 18 501
Dimethyl Sulphate 0.005/c (9)	0.005 – 0.05 ppm	50	67 18 701
Dimethyl Sulphide 1/a (5)	1 – 15 ppm	15	67 28 451
Epichlorohydrin 5/b	5 – 50 ppm	8	67 28 111
Ethyl Acetate 200/a	200 – 3,000 ppm	5	CH 20 201
Ethyl Benzene 30/a	30 – 400 ppm	2	67 28 381
Ethylene 0.1/a (5)	0.2 – 5 ppm	30	81 01 331
Ethylene 50/a	50 – 2,500 ppm	6	67 28 051
Ethylene Glycol 10 (5)	10 – 180 mg/m^3	7	81 01 351
Ethylene Oxide 1/a (5)	1 – 15 ppm	8	67 28 961
Ethylene Oxide 25/a	25 – 500 ppm	6	67 28 241
Ethyl Formate	20 – 500 ppm	5	81 03 541
Ethyl Glycol Acetate 50/a	50 – 700 ppm	3	67 26 801
Fluorine 0.1/a	0.1 – 2 ppm	5	81 01 491
Formaldehyde 0.2/a	0.5 – 5 ppm	1.5	67 33 081
Activation Tube for use in conjunction with Formaldehyde 0.2/a tube			81 01 141
Formaldehyde 2/a	2 – 40 ppm	30 s	81 01 751
Formic Acid 1/a	1 – 15 ppm	3	67 22 701
Halogenated Hydrocarbons 100/a (8)	100 – 2,600 ppm	1	81 01 601
Hexane 10/a	10 – 200 ppm 300 – 2,500 ppm	5 1	81 03 681
Hydrazine 0.01/a	0.5 – 6 ppm 0.01 – 0.4 ppm	1 20	81 03 351
Hydrazine 0.25/a	0.25 – 10 ppm 0.1 – 5 ppm	1 2	CH 31 801
Hydrocarbon 2/a	2 – 24 mg/L	5	81 03 581
Hydrocarbon 0.1 %/c	0.1 – 1.3 Vol.-%	2	81 03 571
Hydrochloric Acid 0.2/a	0.2 – 3 ppm 3 – 20 ppm	2 40 s	81 03 481
Hydrochloric Acid 1/a	1 – 10 ppm	2	CH 29 501
Hydrochloric Acid 50/a	500 – 5,000 ppm 50 – 500 ppm	30 s 4	67 28 181
Hydrochloric Acid /Nitric Acid 1/a – Hydrochloric Acid – Nitric Acid	1 – 10 ppm 1 – 15 ppm	1.5 3	81 01 681
Hydrocyanic Acid 0.5/a	0.5 – 5 ppm 5 – 50 ppm	10 2	81 03 601
Hydrogen 0.2 %/a	0.2 – 2.0 Vol.-%	1	81 01 511
Hydrogen 0.5 %/a	0.5 – 3.0 Vol.-%	1	CH 30 901
Hydrogen Fluoride 0.5/a	0.5 – 15 ppm 10 – 90 ppm	2 25 s	81 03 251

Dräger-Tubes	Standard Range of Measurement (20 °C (68 °F), 1,013 hPa)	Measurement Time (min.)	Order Code
Hydrogen Fluoride 1.5/b	1.5 – 15 ppm	2	CH 30 301
Hydrogen Peroxide 0.1/a	0.1 – 3 ppm	3	81 01 041
Hydrogen Sulphide 0.2/a	0.2 – 5 ppm	5	81 01 461
Hydrogen Sulphide 0.2/b	0.2 – 6 ppm	55 s	81 01 991
Hydrogen Sulphide 0.5/a	0.5 – 15 ppm	6	67 28 041
Hydrogen Sulphide 1/c	10 – 200 ppm	20 s	67 19 001
	1 – 20 ppm	3	
Hydrogen Sulphide 1/d	10 – 200 ppm	1	81 01 831
	1 – 20 ppm	10	
Hydrogen Sulphide 2/a	20 – 200 ppm	20 s	67 28 821
	2 – 20 ppm	3.5	
Hydrogen Sulphide 2/b	2 – 60 ppm	30 s	81 01 961
Hydrogen Sulphide 5/b	5 – 60 ppm	4	CH 29 801
Hydrogen Sulphide 100/a	100 – 2,000 ppm	30 s	CH 29 101
Hydrogen Sulphide 0.2 %/A	0.2 – 7 Vol.-%	2	CH 28 101
Hydrogen Sulphide 2 %/a	2 – 40 Vol.-%	1	81 01 211
Simultan. Tube H_2S + SO_2 0.2 %/a	0.2 – 7 Vol.-%	2	CH 28 201
Iodine 0.1/a	1 – 5 ppm	1	81 03 521
	0.1 – 0.6 ppm	5	
Mercaptan 0.1/a	0.1 – 25 ppm	3	81 03 281
	3 – 15 ppm	40 s	
Mercaptan 0.5/a	0.5 – 5 ppm	5	67 28 981
Mercaptan 20/a	20 – 100 ppm	2.5	81 01 871
Mercury Vapour 0.1/b	0.05 – 2 mg/m³	10	CH 23 101
Methyl Acrylate 5/a	5 – 200 ppm	5	67 28 161
Methyl Bromide 0.2/a	0.2 – 8 ppm	8	81 03 391
Methyl Bromide 0.5/a	5 – 30 ppm	2	81 01 671
	0.5 – 5 ppm	5	
Methyl Bromide 3/a (5)	10 – 100 ppm	1	67 28 211
	3 – 35 ppm	2.5	
Methyl Bromide 5/b	5 – 50 ppm	1	CH 27 301
Methylene Chloride 20/a	20 – 200 ppm	7	81 03 591
Natural Gas Odorization, Tertiary Butylmercaptan	3 – 15 mg/m³	3	81 03 071
	1 – 10 mg/m³	5	
Natural Gas Test (5)	qualitative	40 s	CH 20 001
Nickel Tetracarbonyl 0.1/a (9)	0.1 – 1 ppm	5	CH 19 501
Nitric Acid 1/a	5 – 50 ppm	2	67 28 311
	1 – 15 ppm	4	
Nitrogen Dioxide 0.1/a	0,1 – 5 ppm	75 s	81 03 631
	5 – 30 ppm	30 s	
Nitrogen Dioxide 2/c	5 – 100 ppm	1	67 19 101
	2 – 50 ppm	2	
Nitrous Fumes 0.2/a	0.2 – 6 ppm	75 s	81 03 661
	5 – 30 ppm	30 s	
Nitrous Fumes 0.1/a	0.1 – 5 ppm	75 s	81 03 631
	5 – 30 ppm	15 s	
Nitrous Fumes 20/a	20 – 500 ppm	30 s	67 24 001
Nitrous Fumes 50/a	250 – 2,000 ppm	40 s	81 01 921
	50 – 1,000 ppm	80 s	
Nitrous Fumes 100/c	100 – 1,000 ppm	1.5	CH 27 701
	500 – 5,000 ppm	1.5	
Oil 10/a-P	0.1 – 1 mg/m³	25	67 28 371
Oil Mist 1/a	1 – 10 mg/m³	25	67 33 031
Olefine 0.05%/a – Propylene	0.06 – 3.2 Vol.-%	5	CH31 201
– Butylene	0.04 – 2.4 Vol.-%		
Organ. Arsenic Compounds and Arsine	0.3 mg/m³ as AsH_3	3	CH26 303
Organic Basic Nitrogen Compounds	1 mg/m³ threshold value	1.5	CH25 903
Oxygen 5 %/B (8)	5 – 23 Vol.-%	1	67 28 081
Oxygen 5 %/C	5 – 23 Vol.-%	1	81 03 261
Ozone 0.05/b	0.05 – 0.7 ppm	3	67 33 181
Ozone 10/a	20 – 300 ppm	20 s	CH 21 001
Pentane 100/a	100 – 1,500 ppm	15 s	67 24 701
Perchloroethylene 0.1/a	0.5 – 4 ppm	3	81 01 551
	0.1 – 1 ppm	9	

Dräger-Tubes	Standard Range of Measurement (20 °C (68 °F), 1013 hPa)	Measurement Time (min.)	Order Code
Perchloroethylene 2/b	20 – 300 ppm 2 – 40 ppm	30 s 3	81 01 501
Perchloroethylene 10/b	10 – 500 ppm	40 s	CH 30 701
Petroleum Hydrocarbons 10/a	10 – 300 ppm	1	81 01 691
Petroleum Hydrocarbons 100/a	100 – 2,500 ppm	30 s	67 30 201
Phenol 1/b	1 – 20 ppm	5	81 01 641
Phosgene 0.02/a	0.02 – 1 ppm 0.02 – 0.6 ppm	6 12	81 01 521
Phosgene 0.05/a	0.04 – 1.5 ppm	11	CH19 401
Phosgene 0.25/c	0.25 – 5 ppm 0.01 – 0.3 ppm	1 8	CH28 301
Phosphine 0.01/a	0.1 – 1 ppm 0.01 – 0.3 ppm	2.5 8	81 01 611
Phosphine 0.1/c	0.5 – 3 ppm 0.1 – 1.0 ppm	1 2.5	81 03 711
Phosphine 0.1/a	0.1 – 4 ppm	6	CH31 101
Phosphine 0.1/b in Acetylene	1 – 15 ppm 0.1 – 1 ppm	20 s 4	81 03 341
Phosphine 1/a	20 – 100 ppm 1 – 20 ppm	2 10	81 01 801
Phosphine 25/a	200 – 10,000 ppm 25 – 900 ppm	1.5 13	81 01 621
Phosphine 50/a	50 – 1,000 ppm	2	CH 21 201
Phosphoric Acid Ester 0.05/a	0.05 ppm	5	67 28 461
Polytes	qualitative	1.5	CH 28 401
Pyridine 5/A	5 ppm	20	67 28 651
Styrene 10/a	10 – 200 ppm	3	67 23 301
Styrene 10/b	10 – 250 ppm	3	67 33 141
Styrene 50/a	50 – 400 ppm	2	CH 27 601
Sulphur Dioxide 0.1/a	0.1 – 3 ppm	20	67 27 101
Sulphur Dioxide 0.5/a	1 – 25 ppm 0.5 – 5 ppm	3 6	67 28 491
Sulphur Dioxide 1/a	1 – 25 ppm	3	CH 31 701
Sulphur Dioxide 20/a	20 – 200 ppm	3	CH 24 201
Sulphur Dioxide 50/b	400 – 8,000 ppm 50 – 500 ppm	15 s 3	81 01 531
Sulphuric Acid 1/a (9)	1 – 5 mg/m³	100	67 28 781
Sulfuryl Fluoride 1/a (5)	1 – 5 ppm	3	81 03 471
Tertiary Butylmercaptan Natrual Gas Odorization	3 – 15 mg/m³ 1 – 10 mg/m³	3 5	81 03 071
Tetrahydrothiophene 1/b (5)	1 – 10 ppm	10	81 01 341
Thioether	1 mg/m³ threshold value	1.5	CH 25 803
Toluene 5/b	50 – 300 ppm 5 – 80 ppm	2 10	81 01 661
Toluene 50/a	50 – 400 ppm	1.5	81 01 701
Toluene 100/a	100 – 1,800 ppm	1.5	81 01 731
Toluene Diisocyanate 0.02/A (9)	0.02 – 0.2 ppm	20	67 24 501
Trichloroethane 50/d (5)	50 – 600 ppm	2	CH 21 101
Trichloroethylene 2/a	20 – 250 ppm 2 – 50 ppm	1.5 2.5	67 28 541
Trichloroethylene 50/a	50 – 500 ppm	1.5	81 01 881
Triethylamine 5/a	5 – 60 ppm	3	67 18 401
Vinyl Chloride 0.5/b	5 – 30 ppm 0.5 – 5 ppm	30 s 3	81 01 721
Vinyl Chloride 100/a	100 – 3,000 ppm	4	CH 19 601
Water Vapour 0.1	1 – 40 mg/L	2	CH 23 401
Water Vapour 0.1/a	0.1 – 1.0 mg/L	1.5	81 01 321
Water Vapour 1/b	20 – 40 mg/L 1 – 18 mg/L	20 s 40 s	81 01 781
Water Vapour 3/a	3 – 60 lbs/MMcf	1.5	81 03 031
Xylene 10/a	10 – 400 ppm	1	67 33 161

ST-1362-2004

DRÄGER SIMULTANEOUS TEST SETS

	Standard Range of Measurement (20 °C (68 °F), 1013 hPa)	Measurement Time (min.)	Order Code
Dräger Simultaneous Test Set I	Inorganic Fumes	40 s	81 01 735
Dräger Simultaneous Test Set II	Inorganic Fumes	40 s	81 01 736
Dräger Simultaneous Test Set III	Organic Fumes	2	81 01 770
Dräger Simultaneous Test Set Indicator Substances	VfdB 10/01	2	81 03 170
Dräger Clandestine Labtest-Set	Solvents	1	81 03 310
Simultaneous Test Set Fumigation I	Fumigants	3	81 03 410
Simultaneous Test Set Fumigation II	Fumigants	4	81 03 380
Adapter Dräger Simultaneous Test Set, consisting of cutting holder and adapter			64 00 090
Fit-up aid for 81 03 380			83 18 110

ST-1350-2004

DRÄGER DIFFUSION TUBES WITH DIRECT INDICATION

Holder for Dräger-Diffusion-Tubes (pack of 3)	67 33 014

Dräger-Tubes	Standard Range of Measurement for 1 h (20 °C (68 °F), 1,013 hPa)	Standard Range of Meas. for max. Period of Use (20° C (68 °F), 1,013 hPa)	Order Code
Ammonia 20/a-D	20 – 1500 ppm	2.5 – 200 ppm	81 01 301
Hydrocyanic Acid 20/a-D	20 – 200 ppm	2.5 – 25 ppm	67 33 221
Butadiene 10/a-D	10 – 300 ppm	1.3 – 40 ppm	81 01 161
Acetic Acid 10/a-D	10 – 200 ppm	1.3 – 25 ppm	81 01 071
Ethanol 1000/a-D	1,000 – 25,000 ppm	125 – 3,100 ppm	81 01 151
Carbon Dioxide 500/a-D	500 – 20,000 ppm	65 – 2,500 ppm	81 01 381
Carbon Dioxide 1 %/a-D	1 – 30 Vol.-%	0.13 – 4 Vol.-%	81 01 051
Carbon Monoxide 50/a-D	50 – 600 ppm	6 – 75 ppm	67 33 191
Perchlorethylene 200 a/D	200 – 1500 ppm	25 – 200 ppm	81 01 401
Hydrochloric Acid 10/a-D	10 – 200 ppm	1.3 – 25 ppm	67 33 111
Sulphur Dioxide 5/a-D	5 – 150 ppm	0.7 – 19 ppm	81 01 091
Hydrogen Sulphide 10/a-D	10 – 300 ppm	1.3 – 40 ppm	67 33 091
Nitrogen Dioxide 10/a-D	10 – 200 ppm	1.3 – 25 ppm	81 01 111
Toluene 100/a-D	100 – 3,000 ppm	13 – 380 ppm	81 01 421
Trichloroethylene 200/a-D	200 – 1,000 ppm	25 – 125 ppm	81 01 441

ST-2436-2003

DRÄGER-TUBES PUMPS AND SYSTEMS AND ACCESSORIES FOR SHORT-TERM MEASUREMENT

	Order Code
Dräger-Tube Pump accuro® with Tube opener Dräger TO 7000	64 00 000
One hand gas measurement system Dräger accuro®: Gas Detection-set for Dräger accuro®, comprising of: Dräger-Tube Pump accuro®, carrying case, Tube opener Dräger TO 7000 and spare parts set for Dräger accuro®	64 00 260
Soft Gas Detection-Set, consists of Dräger-Tube Pump accuro®, spare parts set for Dräger accuro®, nylon carrying case	83 17 186
MGD Kit (Dräger accuro®), consists of: Dräger accuro®, spare part set Dräger accuro®, carrying case Dräger accuro®	83 18 392
Spare parts set Dräger accuro®	64 00 220

D-12091-2010

DRÄGER X-ACT® 5000

Dräger X-act® 5000 is the new Ex-approved automatic Dräger-Tube pump. For the measurement or sample taking of gases, vapours and aerosols the Dräger-X-act® 5000 is used in conjunction with Dräger short-term tubes or sampling tubes and systems.

	Order Code
Dräger X-act® 5000 incl. shoulder strap, without power supply	45 23 500
Power packs	
Rechargeable battery NiMH, T4	45 23 520
Alkaline battery pack, T4 w/o batteries (6 batteries required)	45 23 525
Alkaline battery (6 batteries required)	81 03 594
Charging accessories	
Wall-Wart Charger 100 – 240 VAC (worldwide)	45 23 545
Car charger 12 / 24 V	45 23 511
Accessories	
SO_3 Filter replacement	81 03 525
Shoulder strap	45 23 565
Resistant tube (Dosage)	65 27 562

Hoses	Order Code
Extension hose, Dräger accuro® & Dräger X-act® 5000, 1 m, incl. adapter for Simultaneous Test Set	64 00 561
Extension hose, Dräger accuro® & Dräger X-act® 5000, 3 m, incl. adapter for tubes, adapter for hose in a carrying box	64 00 077
Extension hose, Dräger accuro® & Dräger X-act® 5000, 10 m, incl. adapter for tubes, adapter for hose	64 00 078
Extension hose, Dräger accuro® & Dräger X-act® 5000, 15 m, incl. adapter for tubes, adapter for hose	64 00 079
Extension hose, Dräger X-act® 5000, 30 m, incl. adapter for tubes, adapter for hose	64 01 175

Accessories	
Fumigation kit orange, w/o content	83 17 147
Tube opener Dräger TO 7000	64 01 200
Tube hot pack holder for usage up to 20 °C, incl. adapter and 2 hot packs	83 16 130
Replacement hot packs (2 pieces)	83 16 139
Hot air probe for analyzing emissions of combusting plants	CH00 213
Bar Probe 400 for examination of fumigants in containers	83 17 188
Exhaust gas probe	CH00 214
Adapter for sampling tubes (NIOSH)	67 28 639

D-11163-2011

DRÄGER AEROTEST 5000

	Order Code
Dräger Aerotest 5000	64 01 220

Accessories	
Pressure Regulator F3002 for measurements in high pressure systems up to 300 bar	33 10 794

ST-1179-2008

DRÄGER AEROTEST

	Order Code
Dräger Aerotest Simultan HP, complete incl. Dräger-Tubes	65 25 951
Dräger Aerotest Alpha, complete incl. Dräger-Tubes	65 27 150
Dräger MultiTest med. Int., complete incl. Dräger-Tubes	65 20 260
Dräger Simultaneoustest CO_2, complete incl. Dräger-Tubes	65 26 170

DRÄGER-TUBES FOR APPLICATION WITH DRÄGER AEROTEST

	Standard Range of Measurement (20 °C (68 °F), 1,013 hPa)	Order Code
Ammonia 2/a for use in CO_2	0.6 – 9 ppm	67 33 231
Impactor for measurement of oil mist in compressed air	0.1 – 1.0 mg/m³	81 03 560
Adapter for Dräger Oil Impactor		81 03 557
Carbon dioxide 100/a-P	100 – 3,000 ppm	67 28 521
Carbon monoxide 5/a-p	5 – 150 ppm	67 28 511
Nitrous Fumes 0.2/a for use in MultiTest med. Int. / Aerotest CO_2	0.2 – 6 ppm 5 – 30 ppm	81 03 661
Oil 10/a-P	0.1 – 1 mg/m³	67 28 371
Phosphine 0.1/c for use in Aerotest CO_2	0.1 – 4 ppm	81 03 711
Sulphur Dioxide 0.5/a for use in MultiTest med. Int.	1 – 25 ppm 0.25 – 1 ppm	67 28 491
Sulphur Dioxide 1/a for use in MultiTest med. Int./ Aerotest CO_2	0.5 – 2 ppm	CH 31 701
Hydrogen Sulphide 0.2/a for use in Aerotest CO_2	0.04 – 1 ppm	81 01 461
Hydrogen Sulphide 1/d for use in MultiTest med. Int.	1 – 20 ppm	81 01 831
Water Vapour 5/a-P	5 – 200 mg/m³	67 28 531
Water Vapour 20/a-P	20 – 250 mg H_2O/m^3 35 – 500 mg H_2O/m^3 150 – 1500 mg H_2O/m^3	81 03 061

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