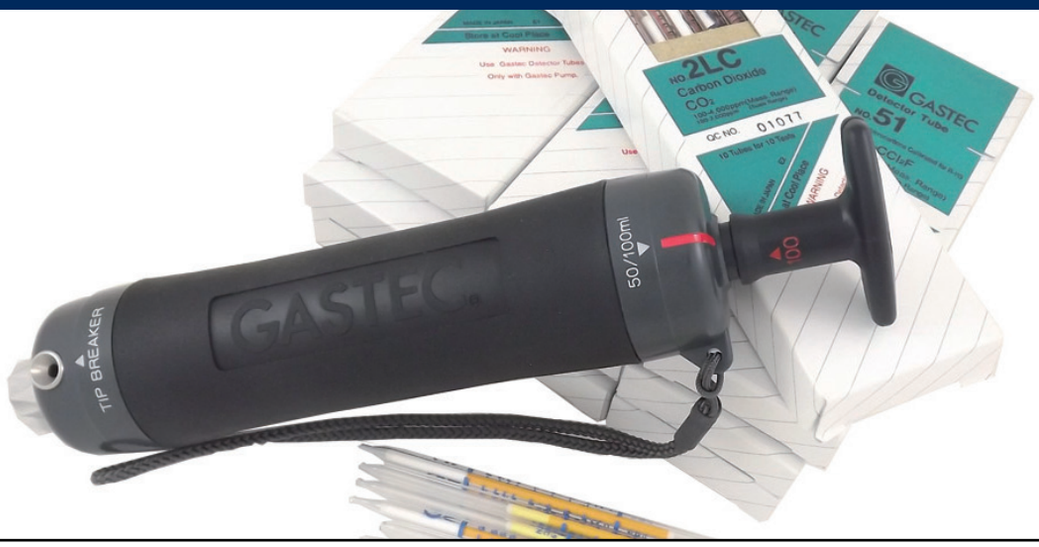

What is the purpose of gas detector tubes?

The gas detector tube system is a complete sampling and analysis system for determining hazardous gas and vapour concentrations quickly and easily. The majority of activities that the detector tube system is used for is to carry out spot sampling e.g. to check the level of hazardous gas within a container that has been unloaded from a ship or for determining the level of hazardous gases present on-site. It is not advised to use detector tubes for personal safety as they don't provide an alarm or warning system.

What are gas detector tubes?

Gas detection or gas detector tubes as they're known are glass tubes that are filled with chemical reagent that absorbs and reacts with the target gas or vapour being measured as part of a gas detection programme. A colorimetric stain (a colour change) is created. For most detector tubes, the concentration is read directly from the measurement scale on each tube. The detector tube system is comprised of a handheld air sampling pump and detector tubes.

How do detector tube system technologies vary?

Gastec and Drager tubes use the same colorimetric technology where the chemical reagent in the gas tube reacts to the gas sample as it is drawn through the tube. The main difference between Gastec and Drager is the gas sampling pump technique.

Gastec utilises an effective piston style pump that requires minimal effort which pulls air through the detector tube. The gas detector tube fits in one end of the Gastec pump. At the other end of the Gastec pump there is a small handle that comfortably fits between your middle and index finger. This is pulled up to draw the sample and clicks once the sample is complete.

Drager utilises a bellow style pump (shaped similar to a stapler). When the bellows are released, the air is drawn and the gas sample to be measured is sucked through the detector tube in use.

How is gas detected using the gas detector tube system?

The detector tubes are generally supplied in packs of ten, and are sealed at both ends. In operation, the tips are broken off using a tube tip breaker, a neat function often within the hand pump or otherwise sold as a separate item. Gas detector tubes are used with a handheld air sampling pump.

Depending on the manufacturer, the pump utilises either a bellows or piston design. The pump connects to one end of the detector tube and the user draws a sample of 50ml or 100ml of ambient air.

As the gas sample works its way up the tube towards the sampling pump, it reacts with the chemical reagent within the tube. The colour stain produced is proportional in length to the concentration. By using a calibration scale printed on the tube, the concentration may be read immediately, without the need for laboratory analysis. The point where this reaction stops is easily read off against markings on the gas detector tube.

What range do the detector tubes measure at?

For many gases and vapours, there are several concentration ranges available (ppm, %, Mg/m^3, mg/l) giving you the flexibility to measure both low and high concentrations without sacrificing precision.

Which gases do detector tubes detect?

Gas detector tubes are available to measure more than 500 different kinds of gases and vapours including the following:

- Acetaldehyde
- Acetic Acid
- Acetone
- Ammonia
- Benzene
- Bromine
- Carbon Dioxide
- Fluorine
- Formaldehyde
- Hydrogen
- Hydrogen Chloride
- Hydrogen Cyanide
- Hydrogen Sulphide
- MEK-Methyl Ethyl Ketone
- Mercaptans
- Nitrogen Dioxides
- Oxygen
- Phosphine
- Styrene
- Sulphuric Acid
- Toluene
- Xylene

What do the most popular detector tubes test for?

Hydrogen Sulphide and Carbon Monoxide are our most popular detector tube types. There are 7 variations of Hydrogen Sulphide detector tubes within the standard tubes classification. The main difference being the range at which they detect. All standard detector tubes are priced at the same price no matter the detection range. There are 8 different Carbon Monoxide detector tube range types.

Do detector tubes offer STEL and TWA readings?

Short Term Exposure Limit (STEL) detector tubes accurately measure gas concentration for occupational hygiene and compliance with laws and guideline standards. The short term tubes account for the lion share of available tubes (standard tubes).

Time-Weighted Average (TWA) tubes provide gas samples for up to eight hours. The direct-reading, length-of-stain tube shows immediate results and is often worn in a lapel for the duration of the shift/working day. TWA tubes eliminate laboratory turnaround time and allow you to correct worker exposure problems faster.

Do short term gas detector tubes comply with standards?

Yes, European Standard EN1231 specifies performance requirements and test methods under prescribed laboratory conditions for length-of-stain detector tubes and their associated pump (detector tube measurement system) used for short term measurements of the concentration of specified chemical agents in workplace air.

What are the benefits of gas detector tubes?

- Detector tubes are most effective for accurate on-the-spot measurements
- Relatively inexpensive
- Intrinsically safe method, allowing them to be deployed in all applications where some gas detectors cannot

Where are detector tubes used?

The gas detector tubes are used by a number of different job roles for various gas detecting activities.

- Hazardous Materials Response
- Clean-up of Spills
- Wastewater Treatment Plants
- Refineries
- Leak Detection
- Marine and Shipping
- Pharmaceutical
- Chemical & Fertilizer
- Fumigation
- Food & Beverage Industry
- Power & Steel Plants
- Municipal Corporations
- Oil & Gas

How much does the gas detector tube system cost?

Following the initial one-off outlay of purchasing an air sampling pump for about £200, the only ongoing cost is for gas tubes. The gas detector tubes are low cost with a pack of 10 tubes costing in the region of around £30. Look out for suppliers that offer detection tubes at one consistent price which makes it easier for procurement processes.

Product FAQ's

Do I need to perform a pump leak test before using the pump and how do I do this?

It is very important to always do a leak test every time you are using an air sampling pump to ensure that you get accurate readings.

You can do this, by confirming that the inlet clamping nut is firmly tightened. After confirming that the pump handle is fully in (therefore, the guide line on the pump shaft is not seen), insert a fresh unbroken detector tube into the rubber inlet of the pump. Align the guide mark (red line) on the back plate and the guide mark (▲ 100) on the handle. Pull out the handle fully along the red guide line on the pump shaft to the lock position, and wait 1 minute. Unlock the handle by turning it more than 1/4 turns and guide it back gradually. Confirm the handle returns to the initial position and the guide line on the pump shaft is not seen

When the handle is unlocked, be sure to guide it back gradually by applying a little resistance. Otherwise, the handle will spring back due to the vacuum in the pump cylinder and possibly damage internal parts.

What to do when my tube shows a blurry result after doing a test?

If you have encountered a blurry discolouration of the chemical reagent in the tube, always take the average between the two points on the detector tube printed scale where it ended.

Is it possible to mix the use of gas detection tubes from different brands of air sampling pump?

It is not recommended.

How do I store and dispose of the tubes?

As detector tubes contain sensitive reagents that are ready to react, and some reagents might be corrosive, care should be taken for their storage and disposal. Used or date-expired detector tubes should be disposed properly in accordance with your local regulations. For further information, consult your detector tube representative.

To keep the high quality of detector tubes, it is necessary to store them in a cool (0 to 10C) dark place (never expose them to the direct sunlight). Never store tubes above normal room temperature.

What should I do when a tube breaks and my hands touched the chemical powder reagent inside the tube?

Always immediately wash your hands, and never rub your eyes or touch your mouth before doing this.

What is the shelf life of the Gastec detector tubes?

Detector tubes have up to a 3 year shelf life (depending on the reagent if kept refrigerated). The use by date is printed clearly on the front of the packet of the detector tubes. Please inform us at point of purchase if you require a long shelf life. a1-cbiss employ a stock rotation policy of first in, first out.

Can I still use the tubes when their expiry date has been expired?

No, to avoid the risk of getting unreliable measurements, we definitely discourage the use of expired tubes.

What is included with the purchase of a Gastec detector tube system?

The Gastec pump kit includes: Protective carry case, Gastec pump, instruction manual and replacement filters.
Detector tubes packs include: Instruction sheet, numbered stickers. Pack details display: Batch number, number of tubes included and valid-until date

What are the dimensions of the box?

150mm x 55mm x 20mm

a1-cbiss Ltd, 11 Ark Royal Way, Lairdside Technology Park, Tranmere, Wirral, CH41 9HT
T: +44(0)151 666 8300
F: +44(0)151 666 8329
E: sales@a1-cbiss.com
W: www.a1-cbiss.com