



Importance of Portable Gas Detection



WE KNOW WHAT'S AT STAKE.

There are four main reasons why gas monitoring is performed:

	Purpose/Type	The Hazard	
	Worker Safety	Toxic gases, O2, Combustible	
	Explosive/Worker and Facility Safety	Explosions	
	Environmental Safety and Compliance	Environmental Degradation	
	Industrial Process Control / Industrial Analytics	Malfunction of the Process	

Portable Instruments generally focus on Worker and Facility Safety

What is a gas detector?

A gas detector is a device that detects the presence of gas in a specific area, often as part of a safety program. This type of equipment is used to detect a gas leak or other emissions. A gas detector can sound an alarm to operators in the area where the leak is occurring, giving them the opportunity to leave. This type of device is important because there are many gases that can be harmful to organic life, such as humans or animals.

Gas leak detection is the process of identifying potentially hazardous gas leaks by sensors. Common sensors include combustible gas sensors, photoionization detectors, infrared point sensors, ultrasonic sensors, electrochemical gas sensors and semiconductor sensors.

Gas detectors can be used to detect combustible, flammable and toxic gases, and oxygen depletion.



Where would we need gas detection?

Exposure to toxic and combustible gas can also occur in operations such as:

- Painting
- Fumigation
- Fuel filling
- Construction
- Excavation of contaminated soils
- Landfill operations
- Confined spaces
- Industrial plants
- Refineries
- Pharmaceutical manufacturing
- Fumigation facilities
- Paper pulp mills
- Aircraft and shipbuilding facilities
- Hazmat operations
- Waste water treatment facilities and many other

Why it is important to detect gas?

 Poisoning - by Toxic gases	 Explosion Hazards - by Combustibles Gases & Vapours	 Suffocation Hazards - by Oxygen Deficiency¹	 Increased risk of Fire - by Oxygen Enrichment
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Possible sources of hazards are: fugitive emissions, industrial process defects, presence of combustible gases / vapors due to leaks, oil leaks into sewers or lakes, acid gas emissions and possible fault or other process errors.

Which gases should you monitor?



The most important technical gases, to protect from around majority of the industries, (representing roughly 75% to 80% of the need to be monitored) are:

- Combustibles (HydroCarbons)
- Oxygen (deficiency and enrichment; O₂)
- Hydrogen Sulfide (H₂S)
- Carbon Monoxide (CO)
- Additionally: NH₃, Cl₂, CO₂, VOC's



Standards and regulations applicable in gas detection:

- Local or industrial Organizations, like: CENELEC, IEC, SCOEL
- OSHA - Occupational Safety and Health Association
- ACGIH - American Conference of Governmental Industrial Hygienists
- NIOSH - National Institute for Occupational Safety and Health
- Global and local standards and norms, like: 2014/34/EU, 1999/92/EC, EN50104, BGR 117

What are important selection criteria for a gas detector?

There can be various selection criteria depending on application, budget or internal regulations. However, typically the following points should be considered when choosing a gas detector:



Speed of sensor response



Accuracy of sensors and stability over a set time



Robustness and resistance to environmental factors



Warranty for complete device without exclusions



Additional alarm options other than visual, audible and vibrating



Ease of maintenance and total cost of ownership



Compatibility with management software and its availability



Visit our **WEBSITE** to learn more about
ALTAIR family of portable gas detectors.



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