



Gas Detection For Life

FAQ

January 30, 2012

HOW DO YOU MONITOR INERT ATMOSPHERES?

Generally, an inert atmosphere is one that contains little or no oxygen and is comprised of mostly non reactive gases. Truly "Inert" atmospheres are usually present intentionally as a result of the oxygen being displaced by an inert gas or other gases.

Inert atmospheres may occur in industrial settings like gas transmission companies, pipelines, cryogenics, power transformers and others. *Nitrogen, argon, helium* and *carbon dioxide* are the most common components of inert gas mixtures.

MONITORING COMBUSTIBLES

The most common sensor used for combustible gases is a catalytic bead type sensor. This type of sensor requires oxygen to operate. As a result catalytic sensors cannot be used for directly monitoring inert atmospheres.

Dilution Fittings

For inert monitoring applications, RKI offers a dilution fitting with many of it's sample drawing instruments both portables and fixed, which adds the oxygen to the sample at a controlled rate. A dilution fitting allows the catalytic bead type sensors to be used to monitor combustible gases in an inert atmosphere.

Infrared Sensors

Another technique that can be used is to employ an infrared combustible sensor to monitor for methane or heavy hydrocarbons. Infrared sensors, do not require oxygen to operate and therefore do not need dilution fittings. However, IR sensors cannot be used to monitor for hydrogen and some other flammable gases.

MONITORING TOXICS

If monitoring for inorganic compounds with electrochemical sensors, most EC sensors require a small amount of oxygen to operate. So, while an EC sensor can detect for inorganic compounds in an oxygen free atmosphere on a very short term and intermittent basis, they cannot be used to continuously monitor in a permanent inert atmosphere.

MONITORING OXYGEN

Finally, oxygen sensors may be used to monitor for the integrity of the inert atmosphere and verify that no oxygen is present within that atmosphere. And oxygen sensors may be used to ensure that an inert atmosphere is not leaking to an outside normal atmosphere, when placed in the normal atmosphere, for worker safety.

Please contact RKI Instruments, Applications Engineering, with any questions or for discussions with your applications.

Available RKI Monitors	
Portables	Fixed
Eagle	35-3000RK
Eagle 2	
GX-2012	
Gas Tracer	
RI/RX-415	
RI/RX-515	