



Gas Detection For Life

Application Brief

September 30, 2020

CO₂ Gas Monitoring for Concrete Suppliers



There are 2,100 Ready Mix concrete suppliers in the US. They provide the foundation for much of our buildings and roadways. It is becoming more common to inject the concrete with carbon dioxide during the mixing stage. Once injected, the CO₂ undergoes a mineralization process and becomes permanently embedded, while shortening the cure time and increasing the concrete's compressive strength.

Ready Mix Concrete companies (RMC's) are required to enter the central mix drum in between wet batch cycles to clean them out and perform routine maintenance. These activities involve confined space entry and this industry has been a long time user of our four-gas personal portable instruments. Many of these users feel that a four-gas instrument is sufficient because they will see a drop in oxygen as CO₂ accumulates. The problem with this logic, though, is that CO₂ is toxic long before it displaces enough oxygen to put that channel in alarm. 5,000 ppm CO₂, the TLV, is just 0.5% volume. In otherwise fresh air, the oxygen channel will read 20.8% volume, instead of 20.9% volume - nowhere near an asphyxiation hazard alarm. In fact, the IDLH for CO₂ is 4% volume, so even if the CO₂ level reaches that point, it will only cause a reading of 20.1% volume oxygen. So even when there is an immediate danger from the CO₂, the oxygen reading is still far away from an alarm condition.



CO2 Gas Monitoring for Concrete Suppliers

RKI Solution



Our GX-3R Pro is ideally suited to address these hazards. In addition to the standard confined space gases: LEL, O2, CO and H2S, the GX-3R Pro is also available with a specific CO2 sensor. The CO2 sensor specifically detects low levels of the CO2 associated with Ready Mix Concrete instead of relying on higher CO2 levels to trigger an O2 alarm.

References:

www.carboncure.com

To learn more about the process

https://www.concreteconstruction.net/producers/tcp-100-north-americas-largest-concrete-producers_o

For the top RMC's in the country

Resources

[GX-3R Pro Datasheet](#)

[GX-3R Pro Price List](#)