ENSURING GAS DETECTION AND COMPLIANCE IN THE DELIVERY OF CARBONATED DRINKS

CASE STUDY

Carbonated ('fizzy') drinks are globally popular, and the carbonated drinks industry directly or indirectly employs millions in manufacturing, marketing and delivery roles worldwide. However, the carbon dioxide (CO_2) that gives carbonated drinks their fizz, and nitrogen (N_2) that give drinks a smooth, creamy head of foam, can be hazardous for those who are exposed to them.

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DELIVERY DRIVERS ARE AT PARTICULAR RISK, BECAUSE THEY ARE ROUTINELY EXPOSED TO BOTH GASES IN MULTIPLE LOCATIONS AND OVER LONG PERIODS.

The Need for Gas Detection

While it is probably best known as an ingredient in fun and indulgent drinks, CO_2 is, nonetheless, dangerous. It can kill in two ways: it can displace oxygen and cause hypoxia, and it can be a toxin in its own right.

If N^2 leaks, it cannot be detected by human senses alone because, like CO_2, it is odourless and colourless. Nitrogen mixes readily with ambient air and the main danger comes from the way it displaces oxygen which, if it reaches a severe enough level, can cause asphyxiation and death. More commonly, small leaks of N_2 may cause confusion, dizziness and loss of consciousness. This is extremely dangerous for delivery drivers, who will be taking control of a large and dangerous vehicle on public roads, immediately following exposure.

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NEITHER N_2 OR CO_2 CAN BE DETECTED BY TASTE OR SMELL. PROFESSIONAL GAS DETECTION IS REQUIRED WHEREVER THEY ARE STORED AND USED.

Professional gas detection is required

Many regions specify maximum exposure levels, and any failure to comply with these can lead to prosecution, along with financial and reputational harm.

Notably, it can be difficult to enforce the use of gas detectors among delivery drivers in this sector because traditionally those detectors have been taken by the drivers from a pool of shared devices, rather than allocated clearly to any individual. But in the event of any CO_2/N_2 exposure, the company will be liable and may incur heavy financial penalties. Their reputation is also likely to suffer, which may harm their brands and lose sales.

COMMON APPLICATIONS FOR GAS DETECTION IN THE DELIVERY OF CARBONATED DRINKS INCLUDE:

- In many parts of the world, drivers deliver carbonated drinks directly into the customer's cellar or storage rooms. These areas are often small and poorly ventilated – they are considered to be confined spaces – and any leaked CO_2 will pool at floor level, having nowhere else to go. Over time, this leads to a build-up of CO_2 that is immediately dangerous to anyone entering the cellar.

- A driver delivering carbonated drinks may visit many such cellars in a single working day. Very often, carbonated drinks are stored with CO_2 cylinders, which makes the risk of CO_2 leakage in cellars very high.

- Nitrogen is also a hazard for those delivering into confined spaces. Nitrogen is often added to carbonated drinks during production to maintain the carbonation (fizziness) and preserve the qualities (including flavour and mouth feel) of soft drinks. It is also used to serve drinks (as with 'nitrokeg' beers), so just as with CO_2, canisters of N_2 may be stored in the cellars and storage rooms that drinks are delivered into, and they may leak.

- Many delivery drivers wear a personal gas detector, but many detectors provide only rudimentary information that must be manually captured after use. This can be tedious and time-consuming. Non-compliance is fairly common, which leads to high levels of risk that are magnified in large device fleets.

- The data generated by detectors is rarely held in a user-friendly way, or in forms that can be usefully analysed and acted upon.

MANY COUNTRIES REGULATE WORKERS' EXPOSURE TO HAZARDOUS GASES, INCLUDING CO_2 AND N_2, AND SET LIMITS FOR SHORT TERM AND LONG TERM EXPOSURES.

Enforcing and proving compliance

The penalties paid by a business that fails to comply with these can be very severe. But, as we have seen, conventional gas detection is not particularly user-friendly; data often lacks detail (for example, many detection records do not record time weighted average [TWA] exposure) and getting gas exposure data ready for any regulatory audit generates lots of paperwork and takes staff away from other duties. In addition, the carbonated drinks industry has trouble enforcing regulatory compliance among drivers, and/or the drivers do not always use their detectors correctly. This puts both drivers and the business at risk.

QUICK USER ASSIGNMENT, DETAILED GAS SAFETY INSIGHTS

Efficient, automated gas safety insights

Crowcon Connect is a cloud-based solution that quickly, efficiently and automatically collects comprehensive data from Crowcon gas detectors and presents it in user-friendly format that is ideal for audit.

Crowcon Connect also makes it easy for managers to record and analyse their fleet use and fault data, providing safety insights they can immediately act upon – for example by alerting customers to the dangers on their site (and suspending deliveries until these have been fixed) or by delivering to a different part of the building.

Crowcon Connect is particularly helpful when monitoring detector fleets: users can be automatically assigned to their gas monitors (for example via an existing RFID tag, such as their work ID badge) without additional hardware or paperwork. Their data (e.g., exposure alerts, TWA and any issue) is uploaded directly to the cloud at the end of a work shift – no need for additional processes – where it is safely stored and can be accessed 24/7 from anywhere.

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CROWCON CONNECT HAS AN EASY-TO-USE, INTUITIVE DASHBOARD.

Makes data genuinely useful.

The calibration due date for each device is clearly shown in the dashboard; operators can use this information to plan maintenance schedules with the least possible downtime, and ensure that sufficient detectors will be available for use at the start of every shift. The dashboard also shows whether (and when) gas detectors have been switched on/off and used correctly. Because each detector can be assigned to a known, named user, this information makes enforcing compliance straightforward, since it provides accurate, traceable information about each driver's use of life saving detector.

Where delivery teams work from various locations, the Crowcon Connect dashboard allows users to break down detector fleets by region, site and team. Access can be granted by fleet, protecting users' privacy and ensuring the firm's compliance with data protection rules.
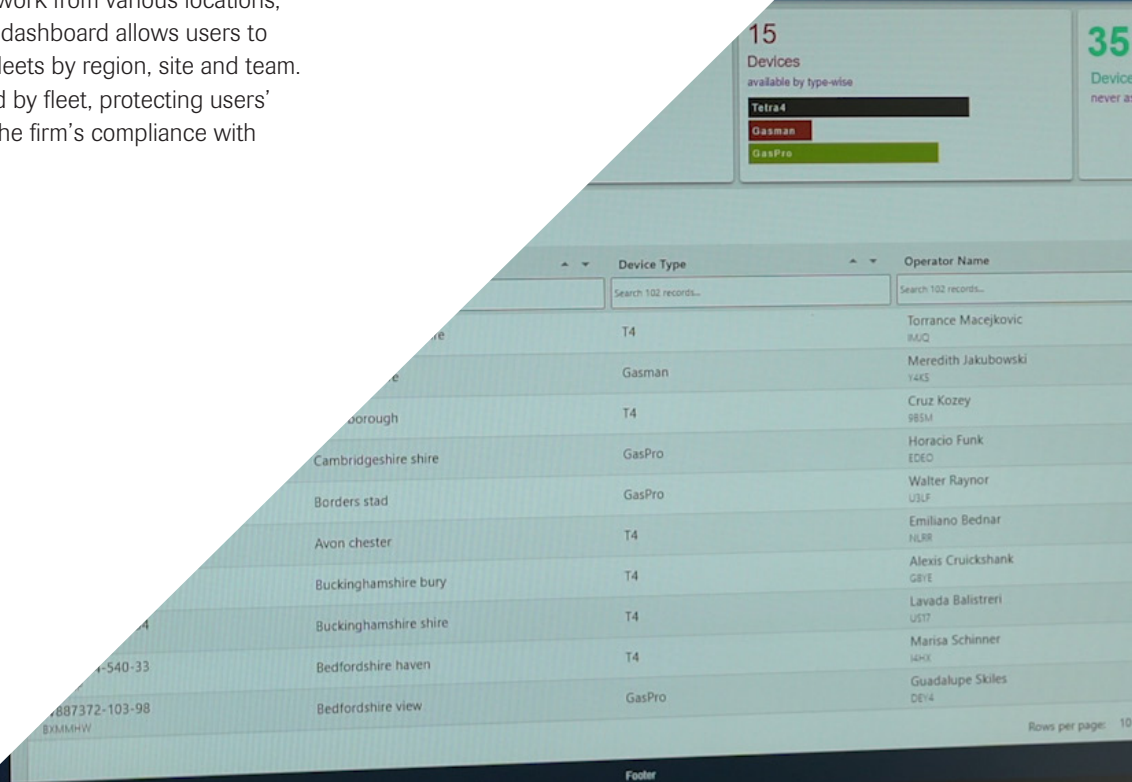
PROVING COMPLIANCE HAS ALSO BEEN A BURDEN FOR THIS SECTOR.

In a nutshell

The risks of carbon dioxide and N2 are frequently overlooked in the carbonated drinks sector, and particularly in non-manufacturing aspects such as deliveries. Too often, delivery drivers do not use gas detectors properly, which raises their own risk level and that of the employing business. Proving compliance has also been a burden for this sector. Crowcon Connect is a cloud-based solution that removes these burdens by allowing each device to be clearly allocated to a named individual, providing a wide-ranging dashboard of accurate, real-time data and presenting this in formats that can be used for audit, regulatory and safety monitoring purposes, and data analytics. All data is securely stored in the cloud, where it can be accessed to prove compliance

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