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THE CANARY COMPANY

Information on the solution to meeting new safety and storage regulations for Co2

A newsletter to raise awareness of dangerous gases in the workplace

Welcome to our first newsletter, a publication aimed at alerting readers to potential dangers in storage and handling hazardous gases in your work environment.

Many business operators and employees are unaware that the high pressure cylinders they handle every day are potentially lethal. Furthermore new legislation could make negligence or simply being unaware of these risks in the workplace an extremely expensive mistake to make.

One of the most critical and often overlooked airborne hazards in the hospitality industry is carbon dioxide leakage. Recent developments now mean that virtually all beverage dispensing in clubs, pubs, hotels and even take-away food shops must be monitored and warn when dangerous levels of gas leak from this equipment.

The Canary Company, established in 1994, specialises in providing innovative engineering solutions to a variety of complex air monitoring applications. For the hospitality industry we have developed an inexpensive CO2 monitoring system which complies with the Australian Standards.

We have also developed gas detection solutions for agriculture, commerce, government and heavy industry to detect and control harmful gases & chemical vapours in a process and at risk of leaking into workplace breathing air.

We provide the product choice, technical know-how and client support systems that meet your gas detection needs with reduced risk, improved safety and high accuracy outcomes in the most field friendly and cost-effective way.

If you have an air monitoring issue which requires specialist information call us for expert advice on national toll free 1800 668 166 or international + 61 2 9418 6666.

Howard Peterson
Managing Director

CO2 - a silent killer that can endanger your staff and you

At 9:30 pm on August 12, 1986, a cloudy mixture of carbon dioxide (CO2) and water droplets belched upwards from Lake Nyos, Cameroon.

The deadly cloud, about 50 metres thick advanced down-slope into adjacent valleys killing over 1,700 people, thousands of cattle, and many more birds and animals.

Under normal ambient conditions, CO2 is a colourless, odourless, non-explosive gas. However, exposure to higher levels of CO2 can lead to asphyxiation caused by a reduction of the oxygen content in a person's breathing zone. Immediate danger occurs when people are exposed to levels of CO2 above 3%.

This is the highest level WorkSafe Australia allows, called a Short Term Exposure Limit or 15 minute STEL, to which the average worker may be exposed

Occupational exposure

Occupational exposure to CO2 is widespread. Fatalities and near-fatal incidents in Australia caused by CO2 have been reported in industries as diverse as winemaking, shipping and electricity generation, affecting workers including chemists, dockworkers and welders.

In the club and hotel industry either CO2 or a mixture of CO2 and Nitrogen is used in beer and soft drink gas systems to carbonate and provide a pressure head for tapping off beverages.

In April, 1998 WorkSafe Victoria published an alert describing a fatality in a hotel cellar caused by a CO2 gas leak in the hotel's beverage system. Several other injuries to cellarmen caused by leaking gas systems are known to have occurred.

Lake Nyos

In a poorly ventilated area like a cellar the oxygen in the air can be diluted and displaced by gases from a leaking beer or soft drink gas system. The worker entered a cellar in which this situation occurred, was overcome without warning and died.

Best protection

Death from inhaling a lethal concentration of CO2 can occur within 3 minutes. Those who attempt to rescue a victim in such cases also risk being overcome by the gas.

Because there is always a potential for pressurised gases to escape from manifolded equipment connections, the best protection for workers exposed to the possibility of harm from CO2 is to have a detection system in place.

This warns them of danger before entering a confined space where a buildup of gas has occurred.

To avoid the potential for any dangerously high exposure occurring, AS5034 mandates that not only must continuous CO2 gas monitors be installed, but they must be sensitive down to less than 0.5%CO2 and warn of any such buildup of gas in the workplace to comply.

The new Australian standard for industry beverage dispensing

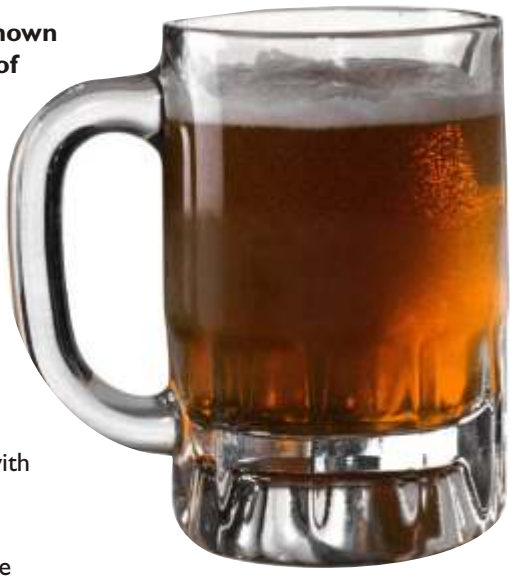
A new Australian Standard, known as AS5034: Installation and use of inert gases for beverage dispensing came into effect on October 28, 2005.

The Standard was developed by a group including the Australian Chamber of Commerce and Industry, Victorian and New South Wales Work-Cover Authorities, gas suppliers, insurers and breweries.

It sets out requirements for the use of inert gases for beverage dispensing and all areas associated with the hazards of compressed and refrigerated gases.

'Compressed inert gas systems' are defined as:

- Supply systems- cylinders (single and multiple, refrigerated liquid CO2 supply, on-site gas generation and mixing and compressed air;
- Distribution systems- regulator boards, safety devices and piping;
- Dispensing applications- post mix and ready to drink (pre-mix) applications, bottled wine dispensing,



draught beer and ready to drink kegs.

Air displacement

Due to all gas systems being under pressure, it is possible that these systems may develop leaks, causing a buildup of inert gases in cellars and low level areas.

As a consequence these areas can present a serious hazard for personnel working in them.

The Standard covers a number of areas including:

1. Design, installation and testing including location and design of dispensing systems

2. Location and ventilation of supply systems including regulators, gas detection, warning systems and emergency procedures.

3. System operation and maintenance including maintenance records

4. Signage

5. Training of staff and contractors

Timing

The requirements are being phased in, depending on location and ventilation properties of storage and cellar areas:

1. Non-naturally ventilated areas need to be compliant by the end of 2007;

2. Gas operated pumps requiring exhaust to outside areas by end of 2007;

3. All other areas requiring compliance improvements by end of 2011.

Complete details of the new Standard can be obtained from the Standards Australia website: www.standards.com.au.

The Solution - GMA 313

Because most businesses affected have little experience with such systems as gas detection and control, management and staff should seek the best advice from experts in air monitoring instrumentation.

Experts need to be experienced with fixed continuous monitoring installation techniques and to be aware of the best means of achieving compliance with AS 5034-2005's requirement.

The Canary Company is able to assist by offering the detection and alarm system GMA313, a low cost, long life detector ideal for premises that use CO2 and CO2/Nitrogen mixed gases, plus a wealth of installation knowledge and know how.

GMA313 is built to comply with European beverage and dispensing standards. The new Australian standard broadly follows these for alarm activation points and operational performance.

Thousands of GMA313s are in use in the EEC to detect leaking carbon dioxide gas from beverage dispensing equipment.

GMA313

This carbon dioxide detector/controller when connected to an alarm module will provide the majority of affected premises compliance within Australia to the new standard AS 5034-2005 at low cost and minimal disruption to service.

For premises using 'Bulk' gases for beverage dispensing we offer our wholly Australian manufactured Canary4000 detection and alarm system. Bulk installations pose extra considerations for the monitoring of gases.

The Canary Company in conjunction with its partners can provide a complete level of support to its end user in after sales service.

These services not only include installation but also regular maintenance from a local representative.

We would be pleased to apply our expertise to give you the best possible solution.

Please call us toll free on 1 800 668 166 or internationally on +61 2 9 418 6666.

Units Active

AS 5034–2005 obligations include hospitality and entertainment venues

In November 2005, after rigorous consultation with industry representatives, manufacturers, suppliers and Association groups, the new Australian standard, AS5034-2005 "Installation and use of inert gases for beverage dispensing" was released.

This standard outlines measures that must be undertaken by all premises where gases such as CO2, nitrogen, argon and other inert gases are used to deliver beverages.

Types of premises could include:

Hotels	Fast food restaurants
Bars	Restaurants
Cinemas	Sporting venues

Clubs include:

RSL	Bowling
Workers	Racing
Sports	Rowing
Sailing	Golf
Country.	

In fact, any venue that uses gases to deliver beverages.

How does this affect you?

The new Standard outlines the requirements for the safe storage, delivery, and maintenance of beverage delivery systems by compressed gases such as CO2, nitrogen (N2), and other inert gases.

A moratorium from prosecution by government workplace organisations exists until December, 2007.

This is to allow management of premises affected by the new Standard, sufficient time for putting the various systems required in place.

Owners and managers of premises affected by the introduction of this new standard should recognise that compliance is 'best practise' for the safe operation of beverage delivery systems and more importantly the protection of staff and customers.

The new standard requires systems to continuously monitor the atmosphere where the inert gases are stored and delivered to beverages.

After a risk analysis has been performed by a suitably qualified person, any non-naturally ventilated area containing gas equipment or pressurised gas systems must then be monitored continuously by a CO2 gas leakage detector.

A warning from this alarm could save a life

Monitoring of Oxygen deficiency may also be required where compressed nitrogen is stored.

Remote alarm warning/control points are to be installed outside the entry points of any potentially hazardous area.

The gas detection instrument must be installed correctly and detect/alarm at the requisite workplace concentrations in accordance with the new standard under section 4.3.2 Gas Monitoring (P. 39).

High pressure cylinder threads, gas regulators and safety signage must also comply with AS 5034-2005, together with the recommendation that all gas delivery systems are to be periodically maintained every 6 months.

AS5034-2005 makes a clear distinction between two types of beverage delivery systems, in use, across affected premises.

Which beverage delivery system does your venue operate?
What gases must be monitored for?

Soft drink beverage system Commonly known as 'Postmix'

'Postmix' systems usually operate using bottled carbon dioxide (CO2).

A carbon dioxide monitoring system is required for these types of beverage systems.

Beer delivery system

Premises where draught (tap) beers are available.

Keg beers are delivered via bottled mixed gases. Common types are AliGal® and Cellarmix®. The bottles are mixtures of CO2 and nitrogen. The mixtures vary for different beers.

CO2 monitoring system is required for these types of beverage systems.

Note: A soft drink beverage system may operate in conjunction with the beer system.

Beer delivery system

Premises where draught (tap) beers are available. The keg beers are delivered via 'bulk' gases.

'Bulk' gases can be defined as full concentration gases mixed to produce the various concentrations for the beers.

Commonly, the CO2 is the only bottled gas as the nitrogen is produced by a machine that removes Oxygen from air thus leaving nitrogen.

AS5034-2005 recognises that there is potential for a CO2 and/or nitrogen leak.

A CO2 and Oxygen deficiency monitoring system is required for these types of beverage systems.

Note: A soft drink beverage system may operate in conjunction with the beer system.

The gas detection system employed must be installed correctly and provide audible and visual warnings in accordance with section 4.3.2 "Gas Monitoring".
All gas detection systems must be maintained every six months. High pressure cylinder threads, gas regulators and safety signage must also comply with the new standard.

Case Study

Chatswood Golf Club gains a simple, economical solution to meet obligations

Chatswood Golf Club Limited
ABN 54 000 990 616

30th May 2007

To Whom It May Concern

During 2006 the Directors and Management of Chatswood Golf Club Limited became aware of their obligations to comply with a new workplace safety guideline being implemented nationally from December 2007 and underpinned by the Australian Standard AS5034-2005 "Installation and use of inert gases for beverage dispensing". Management recognised that to continue to adhere to its standing policy of providing a workplace and member facilities that comply with a 'best practice' approach to occupational health and safety, the Club must adopt the requirements of this new standard.

A surprise for the Club was the requirement to install electronic gas monitors and alarms that would detect any leaking beverage gases. The Club identified two beverage delivery systems that operated using the gases that required monitors. The risks associated with leaking beverage gases had, until then, not been recognised as a risk to staff and members.

In early 2007 the Club was contacted by the Canary Company Pty Ltd of Lane Cove NSW. Their representative arranged to present to the Club their beverage gases monitoring system. At the conclusion of their presentation the Club felt it had a much greater understanding of why beverage gases required monitors to detect leaks. Their presentation clearly imparted the hazards that leaking gases could pose to the Club's staff and members.

Following a site visit by the Canary Company's installation team, their quotation was received.

The Canary Company's offer was accepted based on its simplicity, relatively low unit cost once installed and robustness of design. The GfGmbH GMA313 carbon dioxide gas monitors with local and remote audible and visual alarms were installed. One system is located in the cool-room close to the keg manifold, the other mounted adjacent to the post mix machine in the hallway bar area. Canary technicians worked co-operatively and unobtrusively within the Club's normal operation, completing the installation and commissioning process quickly.

Chatswood Golf Club Pty Ltd is happy to recommend the services of The Canary Company Pty Ltd to other licensed clubs that have a requirement to install CO2 gas leakage detection equipment in compliance with AS 5034-2005.
Yours sincerely

Trevor Harrison

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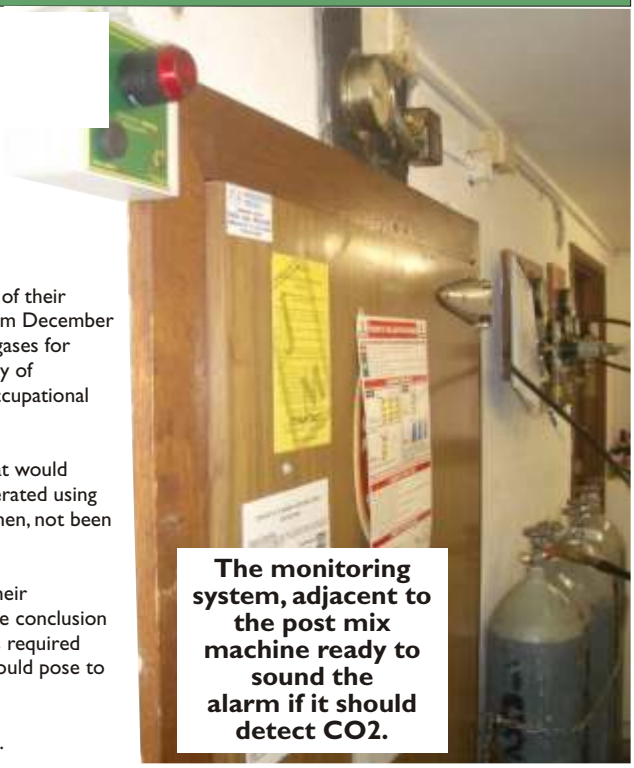

The monitoring system, adjacent to the post mix machine ready to sound the alarm if it should detect CO2.

Monitoring in the cool room alongside the keg manifold.

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More information on our website

The Canary Company website www.canaryco.com.au contains a wealth of detail about our company, our products and our services.

New information is constantly added so check back regularly for the latest news.