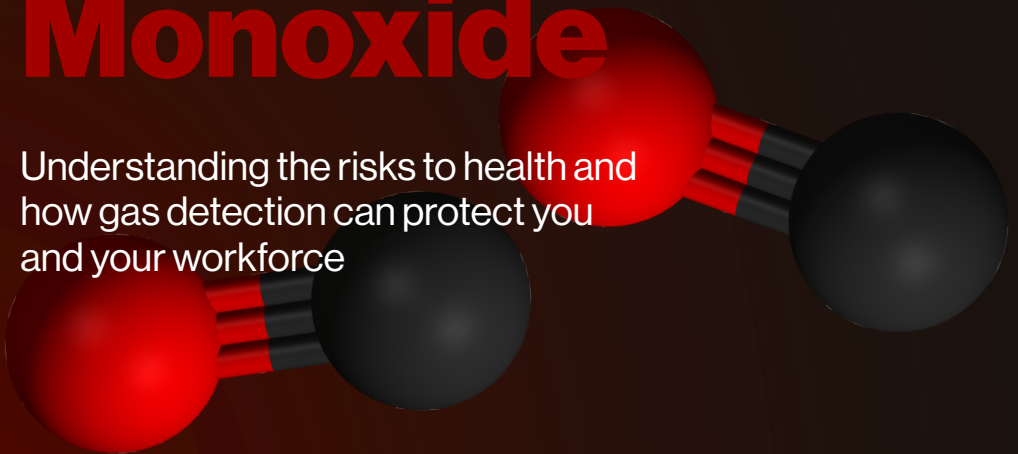watchgas
detection

Carbon Monoxide

Understanding the risks to health and
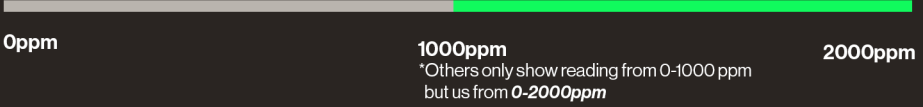how gas detection can protect you
and your workforce

Carbon monoxide (CO) poses a significant threat to human health due to its colourless, odourless, and tasteless nature.

Although largely associated with home appliances and vehicles, carbon monoxide exposure is a potential risk in workplaces such as Steel Production and Heavy Industries.

Understanding the dangers associated with CO exposure and implementing gas detection systems can help safeguard the well-being of both individuals and employees.

*Physical Symptoms may include:

headache, fatique, dizziness,and/or nausia

0ppm

1000ppm
*Others only show reading from 0-1000 ppm but us from **0-2000ppm***

2000ppm

Carbon Monoxide levels chart

0 ppm
Recommended Safe Level

6 ppm
WHO 24 Hour Average

9 ppm
ASHRA 8 Hour Average   NAAQS 8 Hour Average
EPA 8 Hour Average   WHO 8 Hour Average

25 ppm
ACGIH 8 Hour Average

30 ppm
WHO 1 Hour Average

35 ppm
NIOSH 8 Hour Average   Physical symptoms*
NAAQS 1 Hour Average   after 6-8 hours.

50 ppm
OSHA 8 Hour Average (PEL)

30-69 ppm
UL 30 Day Alarm

87 ppm
WHO 15 minute Average

70-149 ppm
UL 1-4 Hour Alarm

200 ppm
NIOSH 15 minute STEL

150-399 ppm
UL 10-50 Minute Alarm

Physical symptoms** after 2-3 hours.

400+ ppm
UL 4 Minute Alarm

Physical symptoms** in 1-2 hours.
Life threatening 3 hours.

800 ppm
Physical symptoms** in 45 minutes.
Unconscious in 2 hours. Fatal in 2-3 hours.

1600 ppm
Physical symptoms** in 20 minutes.
Fatal within 1 hour.

3200 ppm
Physical symptoms** in 5-10 minutes.
Fatal within 25-30 minutes.

6400 ppm
Physical symptoms** in 1-2 minutes.
Fatal within 10-15 minutes.

12800 ppm
Fatal within 1-3 minutes.

The *Dangers* of Carbon Monoxide

Carbon monoxide is a toxic gas that occurs when fuel does not burn completely. Sources of carbon monoxide in a workplace environment can include gas heaters, boilers, combustible engines, and even certain industrial processes. When inhaled, CO displaces oxygen in the blood, leading to oxygen deprivation in vital organs.

Carbon monoxide poisoning can result in symptoms ranging from mild headaches and dizziness to severe confusion, loss of consciousness, and even death. Moreover, prolonged exposure to CO can have long-lasting health effects, including neurological disorders and cardiovascular complications.

Risks to Health and *Protecting* Your Workforce

Given the potential sources of carbon monoxide in a workplace environment, workers are often exposed to extremely high levels of CO. Industries such as manufacturing, construction, and transportation, which operate machinery or utilize fuel-burning equipment, are particularly vulnerable. Additionally, poorly ventilated, or confined spaces can increase the concentration of carbon monoxide, putting workers at an even higher risk.

Preventing Carbon Monoxide Exposure

To mitigate the risks of carbon monoxide poisoning, workplaces should implement the following preventive measures:

1. Adequate Ventilation: Proper airflow and ventilation systems are crucial in minimizing CO buildup. Regular maintenance and inspection

of ventilation systems are essential to ensure their optimal function.

2. Fuel-Burning Equipment Maintenance: Routine inspections and maintenance of fuel-burning appliances and machinery help ensure they operate efficiently, reducing the chances of carbon monoxide leaks.

3. Carbon Monoxide Detectors: Fast detection by using portable gas monitors like SST1 Single gas CO and SST4 Multi Gas devices. These types of devices identify potential leaks before they become a hazard. These detectors should be worn with in the breathing zone or in the case of fixed systems strategically placed and regularly tested to ensure their proper functioning.

4. Training and Education: Properly educating employees about carbon monoxide risks, symptoms, and preventive measures is indispensable. Workers should be aware of the signs of CO poisoning and how to respond in case of an incident.

The Role of *Gas Detection Systems* in Protection

Gas detection systems play a vital role in protecting both individuals and the workforce from carbon monoxide exposure. These systems continuously monitor air quality and alert users when CO levels surpass predetermined thresholds. Early detection enables timely response, including evacuating affected areas and addressing the source of the leak swiftly. The SST Range has the quickest T90 response time on the market and a measuring range from 0-2000PPM. This is important for rapid and precise detection of Carbon Monoxide.

Furthermore, advancements in gas detection technology have made it possible to integrate these systems with centralized monitoring systems, providing real-time data and facilitating immediate responses to potential dangers.

Conclusion

Carbon monoxide is known as the silent killer for a reason. The threat that can have severe health consequences if not properly managed and detected early enough. Workplaces must recognize the dangers and take measures to prevent carbon monoxide exposure. By implementing adequate ventilation, maintaining fuel-burning equipment, issuing carbon monoxide detectors, and educating employees, companies can create a safer environment for everyone. Investing in efficient gas detection systems is an essential step in protecting the well-being of individuals and the workforce and ensuring a healthier and more secure workplace overall.

Compatible products

At WatchGas, we always have the right solution for your application. Whether you need portable or fixed, single gas or multi-gas. Please look at our compatible products or contact us directly at info@watchgas.com.

The SST1 CO Serviceable
- TWA & STEL Alarms;
- NFC and WatchGas Application;
- 3-year battery life based on alarms;
- Serviceable Battery and Sensors;
- Solid Polymer Sensor Design;
- Sensor range 0-2000PPM CO;
- Largest LCD display in its class;
- External Filters.

SST4 Range

SST4 Diffusion covering CO/H2S/O2 and LEL perfect for general use on site. NFC as standard with induction charging and a wide range of options for whatever the application.

SST Pump is a pumped four gas device and designed for sampling confined spaces, silos and pre-entry checks. Coupled with WatchGas accessories this makes pre-entry checks quick and easy.

SST5

For more information please contact us at info@watchgas.com.

UNI Sustainable CO

- Large LCD, 30% larger than most gas detectors;
- Size: 88 x 62 x 33 mm;
- Weight: 125gr;
- Event logger;
- IP-68;
- Password protection;
- Six bright red flashing LEDs;
- Low, High, TWA & STEL alarms.

UNI Disposable CO

- Large LCD, 30% larger than most gas detectors;
- Size: 88 x 62 x 33 mm;
- Weight: 125gr;
- Event logger;
- IP-68;
- Password protection;
- Six bright red flashing LEDs;
- Low, High, TWA & STEL alarms.
- Models: MP103 for 36-months and MP101 for 12-months.

PDM

- Low and High alarms;
- Lightweighted & Compact;
- Stores up to 30 events;
- Cost-effective;
- IP-67;
- Fast bump tests with Docking Station;
- Visual, Acoustic and Vibration alarm;
- User-friendly.

PDM+ CO

- Low and High & TWA and STEL;
- Lightweighted & Compact;
- Stores up to 30 events;
- Low cost of ownership;
- Sustainable;
- IP-67;
- Fast bump tests with Docking Station;
- Visual, Acoustic and Vibration alarms.

Poli

- Man Down Alarm with real-time remote wireless notification;
- IP-65 (pumped versions) & IP-67 (diffusion versions);
- Water and dust resistant case;
- Real-time gas concentration readings and alarm status enabled by state-of-the-art wireless technology;
- Large graphical display icon-driven user interface ;
- Simple-to-operate two-button user interface;
- Easy access to pump, sensor, filter, and battery;
- Intelligent sensors store calibration data, so they can be swapped in the field.

QGM

- IECEx and ATEX Zone 0 approved
- Simple single button operation
- Durable, grippy housing
- Displays actual gas concentrations, TWA and STEL values
- Adjustable alarm levels using the WatchGas IR Link
- Data log: up to two months or more
- Optical, acoustic and vibrating alarms
- Docking station available for rapid bump test and calibration
- Battery up to two months (IR only)

WatchGas 101

- Data logging;
- Three alarm stages + relays;
- 4~20mA analog output;
- Sensor input select 4~20mA/mV BRIDGE;
- Backlit alphanumeric full status display;
- Front panel access to set up and maintenance of parameters.

10+

- Compact size;
- Single stage alarm / relay;
- Alarm sounder / LED;
- Digital display;
- 4~20mA analogue output;
- IP-64 weatherproof;
- Remote catalytic flammable sensor option.

XDIwin

- Explosion proof
- Rugged and reliable
- 3 alarm points
- Addressable or Stand Alone

15J(WIN) / 30J(WIN)

- Robust and weatherproof;
- Flexible output options;
- Addressable or stand alone;
- Hyper Terminal communications RS232 line data and set up with 232 adapter.

XDI

The XDI-F1 Gas Sensor is capable of utilizing a wide range of sensor cell types offering an unmatched number of gases that may be monitored. Standard 4~20mA signaling with CANbus address enables the sensors to be networked via the WatchGas Combi control system or customer preferred monitoring systems.

AirWatch

- Functions in standalone mode or as part of a mesh network;
- Automatically switches pumps, on/off buttons, ventilation, etc.;
- Developed for demanding environments;
- Can be used inside and outside;
- Flexible and programmable;
- Built-in pump;
- Available with battery pack.

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