

## Typical Applications in Brief

- **Commercial Buildings** – monitoring of Carbon Dioxide (CO<sub>2</sub>) levels in offices, schools, hospitals and other commercial buildings is essential for the health and safety of people working in this environment
- **Parking Garages and Vehicle Repair Shops** – buildup of Carbon Monoxide (CO) and Nitrogen Dioxide (NO<sub>2</sub>) in parking garages exposes people to dangerous levels of these toxic gases
- **MRI Rooms** – continuous monitoring of Oxygen (O<sub>2</sub>) level in MRI rooms is essential. MRI rooms use liquid helium to cool the superconducting magnets in the MRI machine. If the helium leaks, it will displace the Oxygen (O<sub>2</sub>) in the room leading to potential, and possibly fatal, oxygen deficiency.
- **Cold Storage & Freezer Rooms** – Ammonia (NH<sub>3</sub>) leak can pose a serious health threat and result in food spoilage
- **Single and Double Chiller Rooms** - refrigerant leak can potentially be a health hazard and loss of refrigerant leads to excessive energy costs
- **Hotels** – refrigerant leak in air conditioning systems can be toxic, and in some cases flammable
- **Hatcheries** - Ozone (O<sub>3</sub>) is an effective hatchery disinfectant but dangerously high levels of this gas can be toxic. Continuous monitoring is essential to detect leaks early.
- **Ice Arenas** – Ammonia (NH<sub>3</sub>) is commonly used in chiller mechanical rooms and leakage exposes people to this toxic gas
- **Indoor Pools** – continuous monitoring of Chlorine (Cl<sub>2</sub>) and Ozone (O<sub>3</sub>) in indoor pools is essential to detect leaks early. Dangerously high levels of these gases can be toxic.
- **Wineries and Breweries** – alcohol fermentation produces Ethanol and Carbon Dioxide (CO<sub>2</sub>) as metabolic waste products. Carbon Dioxide (CO<sub>2</sub>) leak can pose a serious health threat. It is heavier than air, thus, displacing oxygen to a dangerous level.
- **Buildings on Old Landfill Sites** – continuous monitoring of Methane (CH<sub>4</sub>) in buildings built on old landfill sites is essential for the safety of people living in these potentially explosive sites
- **Greenhouses** – Carbon dioxide (CO<sub>2</sub>) is an essential component of photosynthesis but it can be a potential health hazard at high levels. Continuous monitoring is essential for the health and safety of people working in this environment.
- **Vehicle and Train Tunnels** - buildup of Carbon Monoxide (CO) and Nitrogen Dioxide (NO<sub>2</sub>) in tunnels exposes people in passenger vehicles and commuter trains to dangerous levels of these toxic gases
- **Hazardous Areas** – continuous monitoring of combustible gases, Hydrogen (H<sub>2</sub>), Methane (CH<sub>4</sub>) and Propane (C<sub>3</sub>H<sub>8</sub>), in hazardous areas is essential for the health and safety of people working in this potentially explosive environment
- **Mines** – toxic gases are often released in underground mines. These gases can be a mix of any or all of these gases: Carbon Monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Nitrogen Dioxide (NO<sub>2</sub>), Methane (CH<sub>4</sub>), Hydrogen Sulphide (H<sub>2</sub>S) and Sulfur Dioxide (SO<sub>2</sub>). Continuous monitoring is essential for the safety of people working in this environment.
- **Waste Water Treatment Plants** - the most common hazardous gases found in this type of facility are Hydrogen Sulphide (HF), Methane (CH<sub>4</sub>), Ammonia (NH<sub>3</sub>), Carbon Monoxide (CO) and Chlorine (Cl<sub>2</sub>). To ensure the safety of the workers, equipment and the facility, every area presenting a gas hazard should be monitored.
- **Particulate Air Pollution** – particles such as dust, pollen and mold spores, also known as PM10 particles, are largely associated with potentially damaging effects on the respiratory and cardiovascular systems. Continuous monitoring of these air pollutants in highly urbanized areas is required by government legislation.