Understanding Gases

Sulphur Dioxide

Sulphur Dioxide, also called SO_2, is a colourless gas that is created through the burning and smelting of fossil fuels and sulphur-containing mineral ore.

Colourless gas

It has a strong smell which can choke those in the vicinity. When dissolved (such as in rains) it forms sulphurous acid.

SO_2 is released into the atmosphere from coal burning electrical utilities, as well as within refineries, manufacturing, metal smelting and processing facilities.

What are the dangers of Sulphur Dioxide?

When dissolved in water SO_2 becomes sulphurous acid, as mentioned above. This is a large component of acid rain. Acidic rain causes damage to the environment by ruining crops, forests, wildlife habitats. It also decays materials and buildings.

Alongside the environmental impact of SO_2, in all its forms, this substance causes harm to human health. When inhaled or ingested it can affect the respiratory system, causing congestion, ENT irritation, wheezing, asthma attacks and at worst loss of consciousness.

How do you detect Sulphur Dioxide?

Although SO_2 has an obvious and unpleasant smell, detecting it via odour alone is not a safe way to ensure the safety of those in the environment. The EH40 safety limits for SO_2 are only 0.5 ppm for an 8-hour exposure and 1ppm for a 15-minute exposure. If you can smell it, it is already too dangerous. The implementation of an SO_2 detector is the way in which to accurately measure concentrations of this toxic substance. Implementing a reliable detector which measures the levels in the air via the parts per million (ppm) or parts per billion (ppb) sulphur dioxide detection.

Gas detection systems allow operations across various applications and industries to remain aware of the sulphur dioxide in the air and keep individuals safe from this toxic gas and ensure worker safety.

What should you do if you are exposed?

If exposed to sulphur dioxide it is important to act quickly, as when SO_2 reacts with body moisture sulphurous and sulfuric acids are formed which can cause chemical burns, especially in the airways.

For significant exposures, affected or soiled clothes should be removed immediately, and exposed areas of the body should be washed with plain water or saline, for up to five minutes. Contact lenses must also be removed in order to avoid trauma to the eye.

For respiratory issues oxygen masks can be utilised to help stabilise the system. For more severe breathing difficulties individuals should be transferred to critical care and supported with breathing through CPR.

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