



Inergen®

Gaseous fire suppression systems -
protecting people and the environment



Detect and suppress fires before they can even take hold

Why install an Inergen® gas flooding system?

If a major fire occurred in a key area of your organisation such as the IT server area, electrical switch room or plant control room, the consequences could be serious.

An in-depth risk management analysis can identify the short and long-term financial implications such an event would have on an organisation.

The Inergen® gas flooding fire suppression system has been designed to help suppress a fire at the early stage of development.

What is Inergen®?

Inergen® is a unique gas flooding fire suppression medium composed of three inert gases which occur naturally in the surrounding environment.

These gases include; i.e.

- Nitrogen 52%
- Argon 40%
- Carbon Dioxide 8%

The Inergen® system comprises the following elements:

- High pressure gas storage cylinders fitted with quick release valves.

- A network of gas distribution pipework and nozzles.
- A dedicated fire detection and alarm system to enable both automatic and manual release of Inergen®. It effectively interfaces with other building systems such as air-conditioning and building management systems.

How does Inergen® work?

The normal atmosphere in a standard room contains 21% oxygen and less than 1% carbon dioxide. If the oxygen content is reduced below 15%, most ordinary combustibles will not burn. Inergen® reduces the oxygen content to around 12.5% while increasing the carbon dioxide content to between 2-4%. This compensates for the lower oxygen level within a room where a fire is being extinguished by an Inergen® system.

Why installing an Inergen® system is so important

- Protects lives
- Protects property
- Protects the environment

Inergen® protects human lives

Because of its unique blend of inert gases, Inergen® is people friendly.

Fact: Inergen® systems detect and suppress fires in seconds – before they can take hold.

Protecting People & Property

Effectively overcoming flames, not people

FACT: Inergen® is made up of naturally occurring gases found in the air we breathe. Thousands of people have experienced Inergen® through test and actual discharge.

Inergen® has been identified as being safe for use in “normally occupied areas”.

It also has a proven track record of safety in operation with no ill effect to people.

Escape routes are not obscured

Inergen® is stored in a gaseous form, therefore, it does not produce a ‘fog’ when the gas is released in a room. This makes it easier for people to quickly locate escape routes.

No toxic decomposition products

Because Inergen® agent is composed of atmospheric gases, it does not pose the problems of toxicity associated with the chemically derived agents.

Protecting New Zealand with Inergen®

Wormald installed the first Inergen® system in New Zealand in May 1993. Since then, we have gone on to commission over 500 systems around the country.

Wormald Inergen® installations are currently protecting a wide range of critical risk areas from computer rooms at major trading banks through to control rooms on offshore oil production platforms.

No corrosive decomposition products

Inergen® does not chemically interact with a fire, therefore, no corrosive decomposition products are formed as a byproduct.

Excellent retention time within the room

The density of Inergen® (1.43kg/m³) is very close to that of air (1.2kg/m³) hence it has excellent “holding” or “soak” times. This means that an inert atmosphere is maintained for significantly longer periods than other gaseous suppression mediums with higher densities.

Inergen® and the New Zealand environment

Inergen® is environmentally friendly, due to a number of unique factors including the following:

- **No ozone depleting potential (ODP)**

Inergen® is composed entirely from natural substances found in the atmosphere.

- **No global warming potential (GWP)**

The carbon dioxide found in Inergen® is not manufactured instead it is drawn from the by products of natural processes.

- **No atmospheric life**

When Inergen® is released into the environment, its components simply resume their natural role within the atmosphere.

Protecting People & Property



Protecting lives, property and the environment

The Inergen® system activation sequence

Within the Inergen® protected facility, smoke detection devices are typically fixed to the ceiling. These detectors are also positioned in other critical areas such as under the floor voids of computer rooms.

The type of detection device utilized depends on the nature of the risk and the degree of sensitivity required. "Stand alone point type" smoke detectors are typically utilized however when a higher degree of sensitivity is required, or when the airflow movement within the room is excessive, other detection devices such as VESDA® aspirating type units are used.

When the Inergen® system is activated, it is done in a sequenced way to ensure rapid fire suppression in the areas where it is needed.

First stage detection activities

- Activation of smoke detection device.
- Operation of first stage audible and visual personnel warning alarms.
- Indication on the gas flooding control panel.
- Indication on the main building fire alarm panel.
- Interfacing with the facility's air handling system to enable shut down.
- Interfacing with the building management system.

In order to ensure reliability and prevent false discharges, smoke produced from the fire must activate two independent detection devices before the Inergen® gas is released.

Second stage detection activities

- Activation of smoke detection device.
- Operation of second stage audible and visual personnel warning alarms.
- Control system time delay is initiated.

At the completion of the preset time delays (typically 15 seconds) Inergen® is released from high pressure gas storage cylinders through the distribution pipework and nozzles and into the area where the fire is present.

FACT: Releasing Inergen® has zero environmental impact as it contains no hazardous decomposition components.



Safe for People. Property. And the Planet.

Available at Wormald

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