

# Fike ProInert™ Frequently Asked Questions (FAQ)

This document is aimed at those giving sales presentations to enable them to answer queries raised by the audience.

## 1) Why has Fike chosen IG-55?

- A) IG-55 is a mixture of 50% Argon and 50% Nitrogen which has a density very similar to that of air. After discharge the extinguishing mixture within the protected space is similar to the air outside and inconsequent will avoid leakage from the protected space. Nitrogen although a cheaper gas is lighter than air and will tend to leak from high level openings whereas Argon is heavier than air and will leak from low level opening.

## 2) Why has Fike chosen a pressure regulating valve where all of the competition use a valve that immediately goes fully open and the discharge is controlled by an orifice plate?

- A) Fike's market research has shown that a big concern among System Users, Building Services Contractors and System Installers is room ventilation. There is conflicting information within the fire protection market with respect to proper room ventilation design and these differences continue to circulate until one is faced with deciding which is the right method of implementing room venting. Adding 50% additional volume into a protected space will cause a pressure increase if some of the air in that space is not allowed to vent. How much ventilation is dependent on, NOT the amount of gas but the flow rate of that gas. The smooth flow rate from the Fike system significantly reduces the cross sectional area of any ventilation.

Restricting the flow from the cylinder is important to avoid over pressurising the pipe work or over pressurising the walls of the protected space. The best way to describe the Fike valve is as a variable orifice plate. When the discharge first starts the pressure in the cylinder is at a maximum so the restriction in the form of an orifice plate needs to be at its maximum. Unfortunately for an orifice plate it needs to be sized for this initial discharge. As the discharge continues the pressure in the cylinder reduces but the orifice plate is still providing the same restriction, which reduces the flow rate considerably. The Fike valve provides a variable orifice plate which opens to allow a constant flow of extinguishant during the discharge thus avoiding pressure surges on the pipe work and the protected space.

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**3) Can we use the results of a Door Fan test to reduce the additional ventilation?**

A) Very often systems are installed prior to the building construction is completed and long before a realistic door fan test can be performed. We also know that sealing a space to retain the extinguishant after the discharge is usually a challenge. The system designer needs to make a judgement on how well the room is sealed and the likelihood of any of the measured results from the door fan test will be sealed. Erring on the side of caution is always best as an undersized vent will cause considerable damage. Fortunately, the Fike Prolnert system requires very little ventilation where either a much smaller vent or fewer vents can be installed prior to a door fan test being completed. Also, after a door fan test a tiny portion of the measured openings can be allocated to room venting thus providing a high safety margin over the measured vents being sealed in the future. Always advise the Client of the conclusions and why the Fike Prolnert system is best.

**4) How much will we save on the ventilation with the Fike system.**

A) Applying a general rule is difficult. Simple vents can cost £12 (€/\$19) per protected m<sup>3</sup>. For a Fike Prolnert system the cost would be £4.4 (€/\$7.0) per protected m<sup>3</sup>.

**5) How much will we save on our piping cost.**

A) Actual costs will be system dependent. Fike research has shown these possible savings of 25% on the average installed pipe.

Prolnert	Competitors pipe size
15	25
20	32
25	40
32	50

From Spon's 'Mechanical and electrical price book 2003'.

**6) Why has Fike chosen a 300 bar storage system.**

A) The Fike Prolnert system saves storage space over the lower pressure systems. For a 200 bar system 50% more cylinders and floor space would be required. A 150 bar system would require 100% more additional cylinders. Fike can comply with the international standards by discharging within 60 seconds without resorting to adding more gas or increasing the initial flow rate still further and causing a bigger room venting problem.

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**7) If the Fike Prolnert system uses the same pipe work pressures as competitors why is the room venting requirements so much less?**

- A) The Fike system uses a constant flow rate during the discharge. Smaller bore pipe work and smaller nozzles working at a constant pressure allows a smooth controlled discharge. An even discharge rate does not create the same peak pressures within the protected space and allows much less room venting.

**8) Why do I need less extinguishant with Prolnert compared to other inert gas supplier?**

- A) NFPA and ISO Standards require that 95% of the extinguishing concentration must be achieved with a 60-second time frame, which makes it difficult to accomplish for inert gas systems utilising an orifice controlled system. An orifice plate provides a very fast initial discharge and slows down throughout the discharge. Often times other inert gas system suppliers will add an additional 10% extinguishant to comply with the requirement.

The Prolnert constant flow valve assembly offers a steady, consistent flow rate. Fike's unique valve design allows the required inert agent to discharge within 60 seconds, so only the actual amount required to extinguish the fire is required.

**9) Are there toxicity problems with Prolnert?**

- A) Prolnert is an environmentally acceptable, people compatible clean agent fire extinguishant for normally occupied spaces. Prolnert utilises natural occurring gases to reduce the oxygen level to approximately 12.5% by volume, which is the limit that will not support combustion. The use of an Argon/Nitrogen mixture does not form products of thermal decomposition.

**10) What does make Prolnert safer than other Inert gas systems?**

- A) Most inert gas systems discharge from the nozzle into the protected space with a high surge flow rate, creating a potentially hazardous pressure peak and require a large venting area to protect the enclosure.

Fike's Prolnert system enters the protected room at a constant flow rate preventing destructive turbulence from occurring.

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**11) How long will it take to recharge a ProInert cylinder(s)?**

A) ProInert utilises readily available inert gases (nitrogen and argon) which are available at all major gas supply companies. Fike Corporation has can recommend gas supply companies within each country that have the capabilities to fill ProInert cylinders in an emergency situation.

**12) Will Fike still sell HFC-227ea and ECARO-25 systems? If yes, how do you decide to recommend ProInert, ECARO-25 or HFC-227ea?**

A) Yes, Fike will continue to sell, support, our HFC-227ea and ECARO-25 product lines. By developing the ProInert fire extinguishing system we have provided the end-user with all clean agent suppression systems to fit their specific needs. It is the end-users preference as to which Fike clean agent extinguishing they utilise.

**13) How can a lower flow rate in the system ensure that the agent is delivered over a long distance?**

A) With long pipe distances, the higher the system flow rate the more pressure reduction there is along the pipe until you reach a point where pressure at the nozzle is too low. By lowering the flow rate, the pressure at the nozzle is maintained, therefore it can be located further distances from the cylinder.

**14) How does ProInert protecting my budget?**

A) From the unique valve design that offers a constant flow rate, ProInert reduces the ventilation requirements cost by approximately 60% compared to other inert gas suppliers.

Fike's ProInert constant flow rate reduces the pipe diameters by approximately 25% compared to other inert gas suppliers. Plus, with the ProInert system, you only require schedule 40 pipe that is less expensive compared to schedule 160 pipe used in other inert gas suppliers manifolds.

According to industry standards, 95% of the required inert gas agent must discharge within 60 seconds. To achieve that discharge rate, our competition will add 10% more extinguishant than you actually needed, which is related to a decaying pressure flow rate. Fike's ProInert system, employing a constant flow rate, allows the required inert agent to discharge within 60 seconds so you are not required to pay for additional extinguishant (cylinders) that isn't required.