porvair
filtration group

PFG051

Flame Arrestors

for Process and Analytical Instrument Applications

A wide range of flame arrestors are manufactured from sintered metal powder.

Used in many process and analytical instrument applications as safety devices for handling combustible gases for gas analysers.

The high thermal conductivity of these flame arrestor cools the flame front or combustion wave by absorbing and dissipating the heat of the flame.

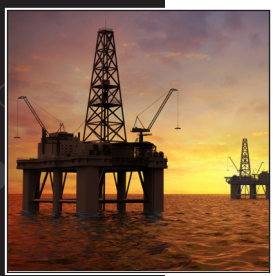
Applications

Process and analytical gas applications:

- Venting for explosion proof enclosures
- Pressure equalisation for combustible gas pressure regulators
- Handling of combustible sample gas for analysers and monitors
- Flashback prevention for welding torches
- Ignition prevention in gas stacks and storage tank vents
- Inhibit the spread of fire or explosions in ductwork and process piping
- Backfire flame arrestor for marine engines and motors
- Oxygen service – special processing available

Features and Benefits

- Excellent flame-arresting properties due to tortuous path within the sintered porous materials.
- Optimum flow of gases. The controlled pore size and uniform density ensures an even flow of gas to the sensor device, and gives excellent pressure restriction.
- Superior mechanical strength including excellent joint strength and seal integrity.
- Media maintains integrity at high temperatures and is non-shedding.
- For sound systems such as loudspeakers, the stainless steel mesh has excellent flame-arresting properties, but with reduced sound attenuation.
- Sintered metal media provides cost effective solutions for high volume devices, especially for applications that require the prevention of a flame front in the event that an intense explosion occurs.
- Porous sintered metal media can also be formed into net shapes and easily joined to hardware to create unique assemblies.



World Class Filtration Solutions

Specifications

Although **Porvair** does not offer a standard product line of flame arrestors, we do manufacture flame arrestors to customers' individual specifications. It is recommended that customers validate porous metal for use in their equipment in order to obtain proper approval in their target market.

Micron Rating

20, 40 and 100 are typically used. Tighter grades are also available.

Materials of Manufacture

Sintered metal materials are a popular choice because these highly engineered materials consist of a uniform, interconnected porosity that can be fabricated to allow precise gas flow control while providing a non-shedding, mechanically sound, media to quench the flame front.

Sintered Metal Flame Arrestors

Comply with the ATEX Directive and the associated International Standards Organisation (ISO) testing guidelines:

- ISO 4003 Æ Determination of Bubble Point Pore Size in Porous Sintered Metal
- ISO 4022 Æ Determination of Permeability
- ISO 2738 Æ Determination of Density in Porous Materials
- Declaration of Conformity per ISO/IEC 17050-2:2004

Typical properties of standard porous 316L SS Flame Arrestors

Arrestor Micron	Mean Pore Size µm	Maximum Pore Size µm	Minimum UTS Mpa (ksi)	Elongation Percent	Shear Strength Mpa (ksi)	Typical % Density	Minimum % Density	Min Air Flow at 5 psi to atm SLPM sq/in
5	7	30	85 (11.0)	6	150 (18.1)	60	50	0.6
10	10	50	64 (9.0)	5	120 (13.9)	58	48	0.9
20	15	70	43 (6.5)	4	90 (11.6)	53	43	1.4
40	20	110	26 (4.0)	3	70 (9.4)	47	37	2.9
100	40	430	22 (3.4)	3	60 (7.2)	38	28	5.9

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