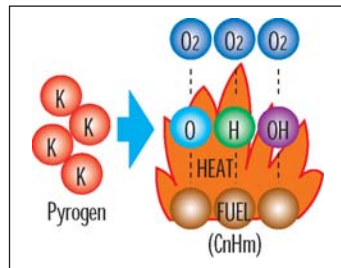


# PyroGen™

Pyrotechnically generated  
aerosol fire suppression systems



Product Brochure

## Introduction to PyroGen

A revolution is taking place in Fire Suppression. Developed from solid rocket fuel technology, Pyrogen is the world's first commercially available Aerosol Fire Extinguishing System. Designed as a safe & practical alternative to Halon, Halocarbons, Chemical Powders and Inert Gases Pyrogen is available from stock in a wide range of canister sizes. Pyrogen is an inert non-toxic solid that remains stable until electrically or thermally activated, where upon it produces a gas-like extinguishing aerosol.

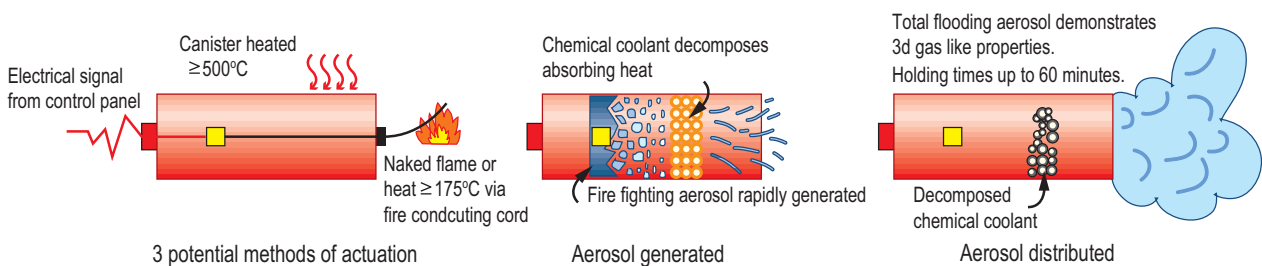
The aerosol attacks the fire chemically and physically, giving virtual instant extinguishment & preventing re-ignition, and in certain instances, explosions. For many applications Pyrogen is the only practical alternative to Halon. The principle of extinguishing action employed by Pyrogen is unique - a special solid chemical, when electrically or thermally ignited, produces combustion products - micron size dry chemical particles and gases.

Dry chemical particles, (mainly potassium carbonates), and gaseous mixture, (mainly carbon dioxide, nitrogen and water vapour), mix together into a uniform fire extinguishing aerosol.

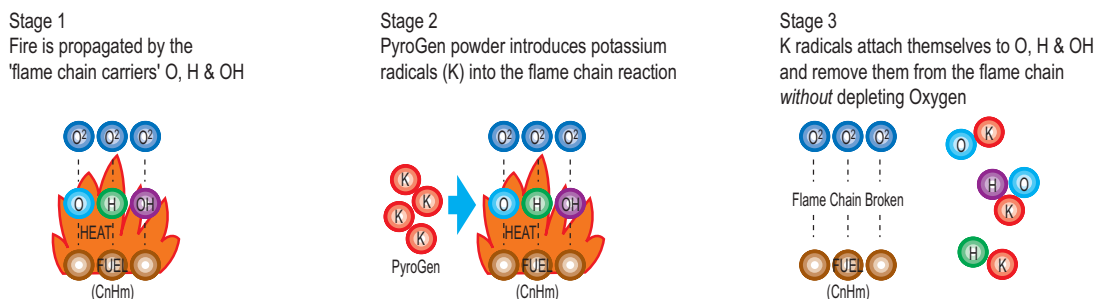
Before being released into a protected area, the hot aerosol propels itself through a unique solid chemical coolant, which decomposes absorbing huge amounts of heat, thus ensuring flameless discharge and uniform distribution of the cool aerosol within the area.

The high rate of aerosol discharge ensures a tremendous knockdown effect. Micron size aerosol particles exhibit gas-like threedimensional qualities that allow the agent to rapidly distribute throughout enclosure and reach even the most concealed and shielded locations. Homogeneous distribution is achieved in a matter of seconds, while long holding times all help to prevent fire re-ignition.

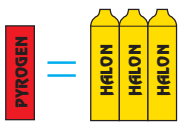
## Physical reaction within the canister



## Principle of chemical reaction suppressing the fire



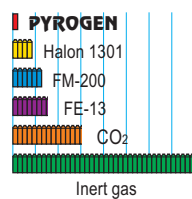
## 3 times more effective than Halon.



At a maximum\* design concentration of 100g per m<sup>3</sup> PyroGen exhibits equal or better extinguishing properties than Halon 1301 at 330g per m<sup>3</sup> volume), as certified by Scientific Services Laboratory. PyroGen has the lowest extinguishing concentration amongst commercially available agents.

\* Recommended maximum for Class A, B, C, E & F type fires.

## Compact & Weight Saving.



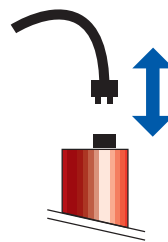
PyroGen canisters can provide the smallest & lightest fire extinguishing system currently available. With space requirements of up to 1/40th of Inert gases, and weight penalties of often only 10% of competing systems, PyroGen in many cases is the only practical Halon replacement.

## Environmentally Friendly



PyroGen has been certified as having Zero Ozone Depleting Potential (ODP) & Zero Global Warming Potential (GWP). It is officially listed by the US Environmental Protection Authority under its Halon replacement 'Significant New Alternatives Program' (SNAP).

## Simple to Install & Recommission.



PyroGen canisters are electrically (or automatically thermally) activated. Simple wiring & plug in connectors can reduce installation times to a 1/3rd or less. If discharged, new canisters may be reinstalled in minutes\* affording minimal downtime and eliminate potentially hazardous periods of non-active fire suppression.

\* Providing all and any necessary safety checks & inspections have been completed.

## No Pressurised Cylinders or Pipe work.



PyroGen Canisters are self contained, zero pressure units. As well as being light & safe to transport, they require no additional pipes, nozzles or distribution equipment. They cannot leak, burst or deteriorate, and can be stored for up to 10 years without maintenance.

## Low Toxicity.



Unlike some Halon alternatives, PyroGen produces no aggressive acids such as Hydrogen Fluoride upon contact with hot surfaces. PyroGen produces no chlorine or bromide and does not deplete oxygen to suppress the fire.

## Tests & certification



PyroGen has been tested by LPC, Scientific Service Laboratories (Australia) and is undergoing further certification worldwide. For the latest approval listings and test data please contact PyroGen HQ or your nearest PyroGen dealer.

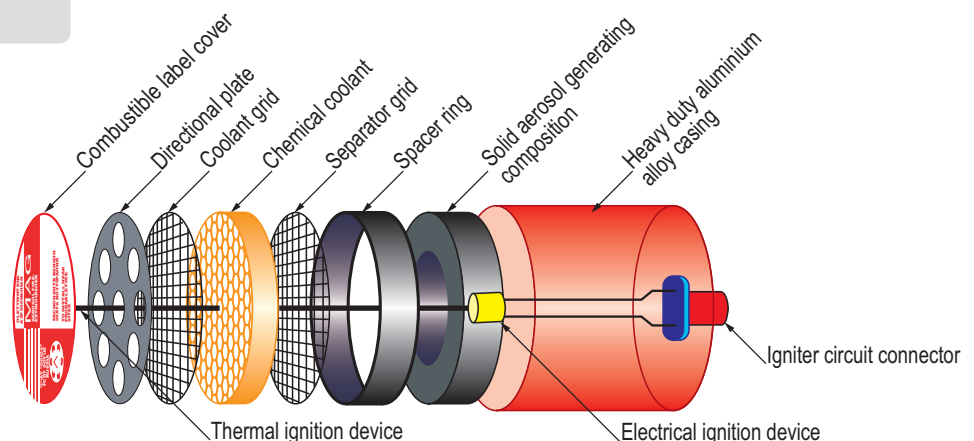
## Cost Effective



With minimal space & weight requirements, simple installation, zero maintenance and up to 10 years service life, PyroGen is arguably the most cost effective Halon alternative available.

## Canister Construction

Typical canister construction



## Canister Characteristics

Canister Material:	Marine Grade Aluminium Alloy
Surface Treatment:	Powder Coated (red)
Max/Min Ambient	-50°C ~ +60°C
Shock:	Tested at 10g for >13,000 impacts
Vibration:	5g @ 50~250Hz
Corrosion Resistance:	Greater than UL 1058
Impact Resistance:	IP558
Humidity:	≤96%

## Electrical (Thermal) Characteristics

Supervision/Monitoring Circuit:	≤1mA
Activation (Electrical):	≥400mA @6/12/24v for 10mS
Activation (Thermal):	≥175°C
Connector:	4 pin Military Type 2 PMDT Analog MIL-C-5015

## Aerosol Characteristics

(at maximum design concentration)

Potassium Carbonates, solid:	~ 7g/m <sup>3</sup>
Nitrogen Gas:	~ 70% by vol.
Carbon Dioxide Gas:	~ 1.2% by vol
Carbon Monoxide Gas:	~ 0.4% by vol
Nitrogen Oxides, Gas:	40 – 100 ppm
Ammonia, Gas:	~ 0.075% by vol
Temp at Nozzle + 500mm:	≤ 75°C
Oxygen (level)	17% to 20% (typical)
Holding time	≤ 60 mins

## Classifications

Suitable for Fire:	Class A - Combustible Solids Class B - Flammable Liquids Class C - Flammable Gases Class E - Electrically Energised Fires Class F - Fats & Cooking Oils
Handling & Transport:	Accordance with UN 1325 & Dangerous Goods Code: 4.1 Haz.Chem. Code : 2[Y] E
Packaging Group:	III

## Available sizes

Parameter	MAG-02	MAG-1	MAG-2	MAG-3	MAG-4	MAG-5	MAG-11	MAG-12	MAG-13	MAG-14	MAG-15
Mass of generator, g	110	400	500	700	4,500	1,830	12,000	14,500	21,000	28,000	38,000
Mass of aerosol forming composition, g	20	60	100	200	1,000	500	1,500	2,000	3,500	5,500	6,000
Max protected volume, m <sup>3</sup> @ 100g/m <sup>3</sup>	0.2	0.6	1	2	10	5	12	17	27	46	50
Nozzle outlet	bi-	mono-	mono-	mono-	bi-	mono-	mono-	mono-	mono-	mono-	mono-
Length, mm	125	120	130	170	406	230	263	315	314	348	273
Diameter, mm	30	75	75	75	95	95	385*	385*	443*	514*	606*
Discharge time, sec	<2.0	<3.0	<5.0	<7.0	<10.0	<8.0	<12.0	<12.0	<15.0	<15.0	<15.0

\* Figure represents overall diameter, including fixing points.

## Health & Safety Statement

Primarily due to the high obscuration, PYROGEN is designed for use in normally unoccupied areas such as data rooms, machinery and engine spaces, control cabinets and storage areas. Inadvertent exposure to the aerosol should be avoided using normal precautions such as warning signals, pre-discharge alarm and post-discharge warning and venting. Accidental exposure to aerosol should be limited to 5 minutes. As obscuration may impede the egress of personnel, hold off devices may be required for large areas or those with internal obstructions. Further details on the safe application, installation, operation and recommissioning of PYROGEN systems is given in the design manual and a manufacturers safety data sheet is available upon request.

For further information on PyroGen & accessories, or any other product within the Pyrogen range, please contact;

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