



# NEW IMPULSE TECHNOLOGIES

**SPECIAL SYSTEMS FOR FIRE FIGHTING  
MULTIFUNCTIONAL EQUIPMENT & MATERIALS**

## IMPULSE AEROSOL

The Impulse Aerosol extinguishers are developed to extinguish fires in confined or semi-confined areas, linked to the Impulse Storm Early Fire Detection System, or other compatible fire detection systems. The aerosol is capable of operation in explosive areas. They are designed to be a safe and simple alternative to the pressurized gas fire extinguishing systems (halon, CO<sub>2</sub>, FM-200, Argonite, etc.) or fixed powder systems.

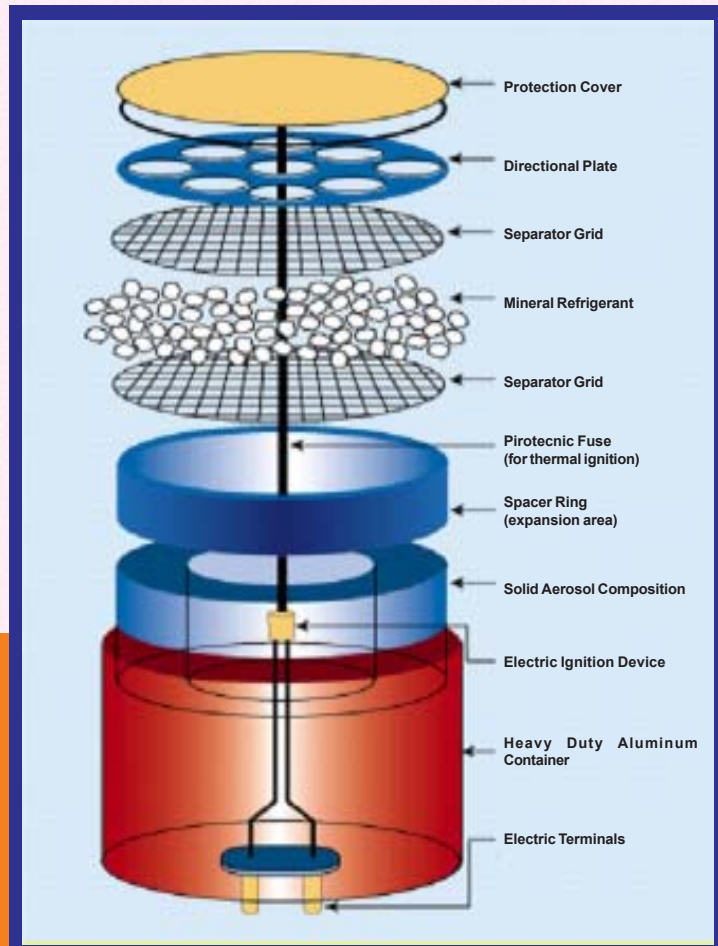
The Impulse Aerosol is an inert and non-toxic solid mixture, which is stable until being activated through an electric discharge or heat, and thereafter emits a discharge of particles which appears to be an aerosol. These particles chemically and physically react with the flame, instantaneously extinguishing it and avoiding re-ignition.

The aerosol particles are chemically neutral, dielectric and non-toxic. When the aerosol is set in operation, the particles do not modify the oxygen concentration on the environment.

The New Impulse Aerosol are available in a variety of different size containers.

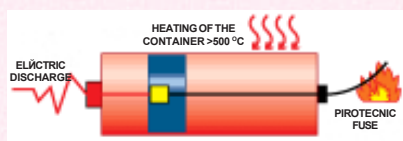
### USES

- Confined or semi-confined areas;
- Electric and/or electronic cabinets;
- Control rooms, storage areas, manufacturing areas;
- Machine rooms, engines, compressors; turbines;
- Vehicles, trucks, trains, ships and smaller boats;
- Remote areas.

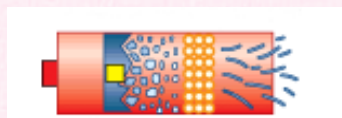


## MECHANISM OF ACTION

The mechanism of action of the aerosol extinguisher is the inhibition of the flame's chemical process through the reaction of the potassium free radicals which are emitted during the combustion of the solid mixtures contained in the aerosol, which keep suspended in the air for a reasonably long period.



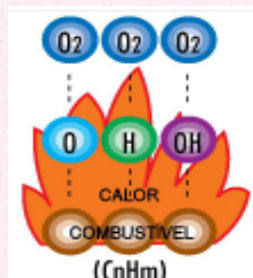
The ignition of the Impulse Aerosol can be made in three different ways.



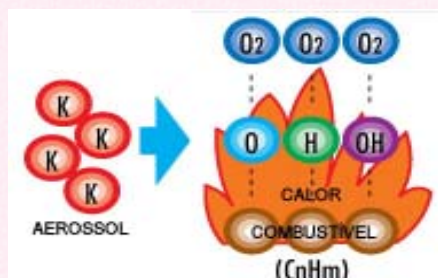
The aerosol is generated and pushed through the mineral refrigerant, reducing its temperature.



The expelled aerosol has a similar behaviour of gas, and stays afloat for around 60 minutes.



The flame is propagated by the flame chain carriers O, H e OH.



The aerosol introduces free potassium (K) radicals into the flame reaction.



The potassium free radicals react with the O, H e OH, removing them from the flame, producing KO, KH e KOH.

## COMPARISON BETWEEN THE IMPULSE AEROSOL AND OTHER PRESSURIZED SYSTEMS

AGENTE EXTINTOR	FÓRMULA	% MASSA	TOXICIDADE	ODP*	GWP** (100anos/CO <sub>2</sub> =1)	VIDA A TMO SFÉRICA (anos)	CONCENTRAÇÃO (g/m <sup>3</sup> )	MECANISMO DE FUNCIONAMENTO
IMPULSE AEROSOL	KNO <sub>3</sub> Nitrocelulose Plástica Carbono Mistura Agregadora	62,3 12,7 9 16	Baixa	0	0	0	100	Químico
Halon 1301	CBrF <sub>3</sub>	100	Baixa	10	5600	65	330	Químico
FM-200	CF <sub>3</sub> CHFCF <sub>3</sub>	100	Baixa	0	2900	36,5	530	Físico
NAF S11	CHCl <sub>2</sub> CF <sub>3</sub> CHClF <sub>2</sub> CHClFCF <sub>3</sub>	4,75 82 9,5	Baixa	0,036	1450	12	530	Físico
FE-13	CHF <sub>3</sub>	50	Baixa	0	11700	264	470	Físico
Argonite (IG-55)	N <sub>2</sub> Ar	50 50	Baixa	0	0	Permanente	600	Físico
Argotec Inergen	N <sub>2</sub> CO <sub>2</sub> Ar	52 8 40	Baixa	0	0	Permanente	500	Físico
Gás Carbônico	CO <sub>2</sub>	100	Alta	0	1	Permanente	900	Físico
Água	H <sub>2</sub> O			0	0	0	-	Físico
Pó Químico			Baixa	0	0	0	1400-1800	Químico /Físico

\* Ozone Depletion Potential: Potencial de deterioração da camada de ozônio

\*\* Global Warming Potential: Potencial de Aquecimento Global



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