

The aerosol extinguishing medium consists of minute solid particles suspended in a gaseous atmosphere (N<sub>2</sub>, water vapor, CO<sub>2</sub> and others), thus referred to as 'aerosol'. After discharge, the particles which are based on potassium compounds, are free from moisture, settle as 'dust', which can be easily cleaned.

During the activation process the FPC changes into a swiftly spreading aerosol, consisting of solid particles that are suspended in the gas phase. The size of these particles is a less than 5 microns. The composition of the FirePro aerosol, consisting of potassium compounds, is not corrosive, not electrically conductive and does not cause any damage to the equipment protected. The particulates settle as dust after approx. 20 mins.

Analysis by a laser beam diffraction test have shown the following gaseous and solid components:

52 % solid micro sized particles	inorganic potassium salts, mainly potassium nitrate, which is primarily converted into potassium carbonate. All particles are less than 5microns in diameter.				
48 % gaseous particles	mainly water vapor, nitrogen and minor % of carbon dioxide				
On activation the FPC has a combustion reaction generating the fire extinguishing condensed aerosol.	GAS	Compound	Chemical	CAS #	% by Weight
		Carbon Dioxide	CO <sub>2</sub>	124-398-9	13%-14%
		Nitrogen	N <sub>2</sub>	7727-37-9	21%-22%
		Water Vapor	H <sub>2</sub> O	7732-18-5	10%-12%
		Carbon Monoxide	CO		
		Methane	CH <sub>4</sub>		1%-2%
	PARTICLES	Hydrogen	H <sub>2</sub>		
		Potassium Carbonate	K <sub>2</sub> CO <sub>3</sub>	584-08-7	47%-49%
		Potassium Nitrate	KNO <sub>3</sub>	7757-79-1	2%-3%
		Potassium Chloride	KCl	7447-4-7	< 1%
		Other elements			< 1%

The residue is non-toxic and non-corrosive, it is hygroscopic in nature, so will attract and retain moisture. The chemical nature of the residues (potassium salts) is slightly alkaline PH is approx. 8.

Particulates should be removed shortly (within max. a few hours) before they can absorb moisture. When dry they do not react to electronic components, metal etc. Where the particulates remain for a longer period, they can absorb moisture, this may create issues.

Extensive tests on electronic circuit boards have been carried by National Aerospace Laboratory of the Netherlands; the boards were exposed to the aerosol density of 100 gr/m<sup>3</sup> and then subjected to temp./humidity cycles at +25°C / +55°C and 90 % humidity. No damage was incurred.

**False or Accidental Discharge of System** will mainly be caused by human error. System should be engineered and installed to prevent these events.

**Shutdowns** - Standards require that before any activation, shutdowns operate to isolate power to the air conditioning, forced ventilation and any other equipment in the room. This protects equipment.

**Coincidence detection** relies on alarm signals across two zones or between two detectors to activate before any system activation occurs. Each zone would employ a different style of detection device: smoke / thermal / etc. Activation of the system should only occur when both zones are in alarm.

## Removal of the Residue:

- Ventilate the risk as soon as practical. reduces the aerosol concentration.
- Clean-up residue soon after activation (within max. a few hours).
- Use a damp cloth or brush to mop up the dry residue from the floor and/or metals.
- Use a fan or spray cleaners to remove the residue from electrical / electronic components.

Electra XL

Safety Wash 4050

Maplin N64AN

Typhoon Blast All

Pow-R Wash CZ

Electro-Wash QD



Aerosol Spray Cleaners - remove dust, grease, oil, and other particulate matter from electronic circuitry. Acts effectively with no residue. Works on circuit boards, and other electronic equipment.