



Sariak

integrity solutions

AEROSOL FIRE EXTINGUISHER DEVICE



**Easy Installation
Non Harmful
Fire Classes A, B & C
Cost Effective**

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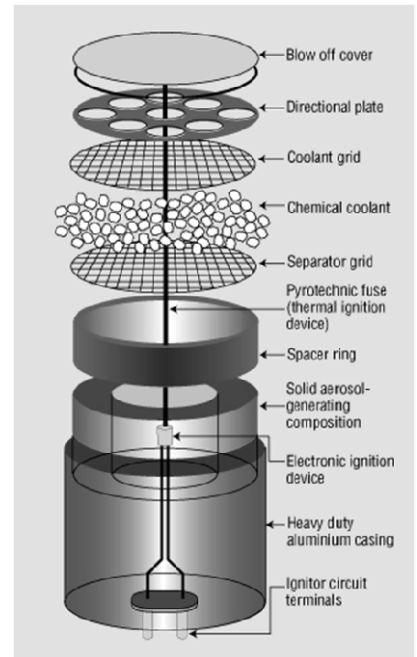
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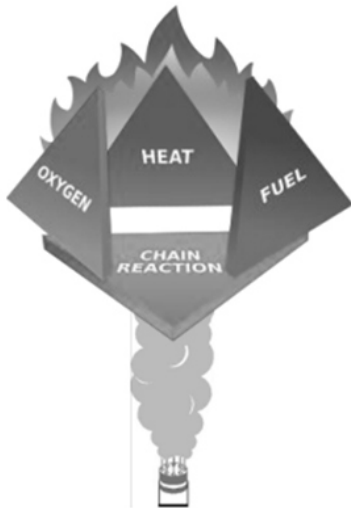
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WHAT IS AEROSOL?

Condensed aerosol fire suppression is a particle-based form of fire extinction similar to gaseous fire suppression or dry chemical fire extinction. The aerosol employs a fire extinguishing agent consisting of very fine solid particles and gaseous matter to extinguish fires. The condensed aerosol micro particles and effluent gases are generated by the exothermic reaction; until discharged from the device, the particles remain in vapor state. They are cooled and "condensed" within the device and discharged as solid particles.



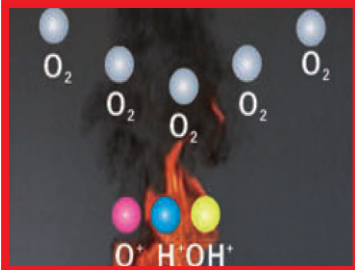
HOW IT WORKS?



Aerosol device act in four way to suppress fire.

1. Reduction or isolation of fuel
2. Reduction of heat
3. Reduction or isolation of oxygen
4. Inhibiting the chain reaction of the above components

HOW IT WORKS?



After fire detect by alarm system, aerosol generators can be active either manually or automatically from a suitable releasing device. After activation, the generators produce an ultra-fine potassium/strontium based aerosol. Aerosol extinguishes fire by inhibiting the chain chemical reactions present in combustion on a molecular level. It removes the flame free radicals and extinguishes fire without depleting oxygen.

In a typical fire, atoms and fragments of unstable free radicals react between them in the presence of oxygen. This continues until the burning fuel is depleted or the fire is extinguished by other means.

On activation of aerosol generator its solid compound is transformed into an aerosol consisting mainly of Potassium salts (e.g. K_2CO_3) H_2O , N_2CO_2 .

The gas type 3D properties of the aerosol particles facilitate their even and fast distribution as well as their flow into the natural convection currents of combustion

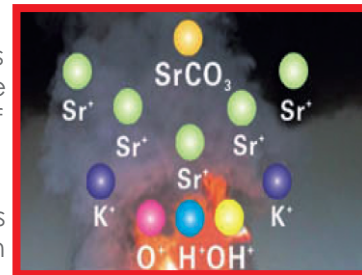
The solid particles of Potassium/ strontium salts a few microns in size, suspended in an inert gas, display an extremely high surface to reaction mass ratio -increasing efficiency and reducing the quantity of material required.

When the aerosol reaches and reacts with the flame, Potassium radicals (K^*) are formed mainly from the disassociation of Potassium salts e.g. K_2CO_3 .

The K^* bind to other flame free radicals (hydroxyls) forming stable products such as KOH.

This action extinguishes fire without having to deplete oxygen.

Aerosol generators are very cost effective to install and maintain, as they don't require the pressure vessel, piping or extra installation cost associated with other extinguishing system an weight requirements are very low.



On an agent weight basis, aerosol is ten times more effective than gaseous agent alternatives. The extinguishing performance of condensed aerosol fire suppressants is dependent on the density of aerosol particulates in the immediate vicinity of the flame. As with gaseous fire suppression systems, the faster the agent can build around the flame, the more efficient the extinguishing agent will be in terminating the flame's combustion process. The extinguishing and design densities of aerosol fire suppression agents are generally expressed in kilograms per cubic meter (kg/m^3).

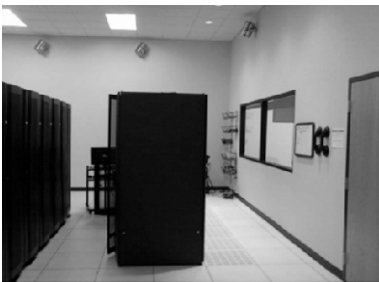
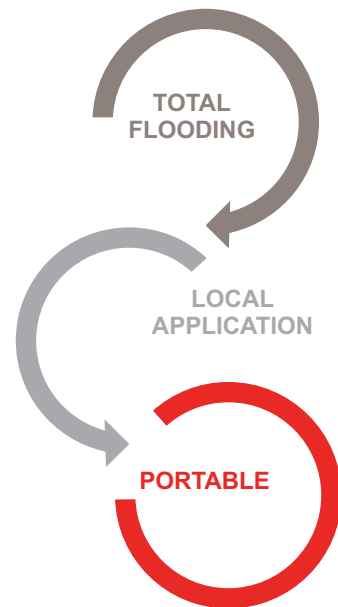
Thus, the efficiency of aerosol extinguishing agents varies depending on a number of factors, such as the location of the aerosol relative to the flame, the proximity of other combustible flammable materials, the type of fuel involved, etc. Aerosol generators are virtually maintenance free and have a service life over 10 years. This coupled to their very low installation cost and makes them an extremely cost effective fire protection

WHERE IT CAN BE USED?

Due to their fast response time, low fire extinguishing concentration and environmental safety, Aerosol fire suppression system may be used in critical application across a wide range of industries.

Aerosol generators are currently protecting and are suitable for use in:

- Power plants
- Marine engine rooms and machinery spaces
- Mobile equipment
- Control rooms
- Telecommunication equipment
- Flammable liquid storage areas
- Turbine and generator enclosures
- Industrial hazards



FEATURES



- Easy for installation as don't need pressure vessel, pipework or other installation extra work

- Long time maintenance period



- Suitable for Classes A, B and C

- Compact and can install in low space with light weight



- More effective than alternative extinguishing agent



- Environmentally friendly- Ozone depletion potential (ODP)= 0 – No global warming potential

- Provides reliable, cost effective protection for a wide range of fire hazards



- Suitable for total flooding system and local application

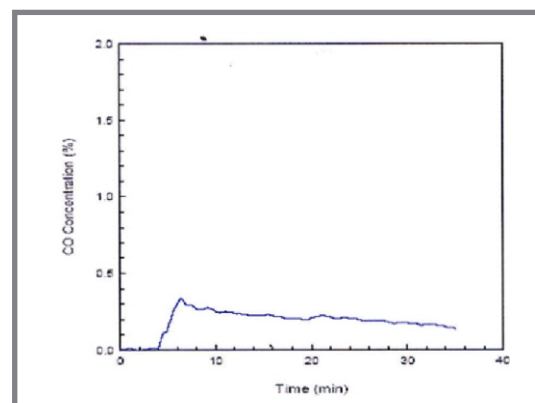
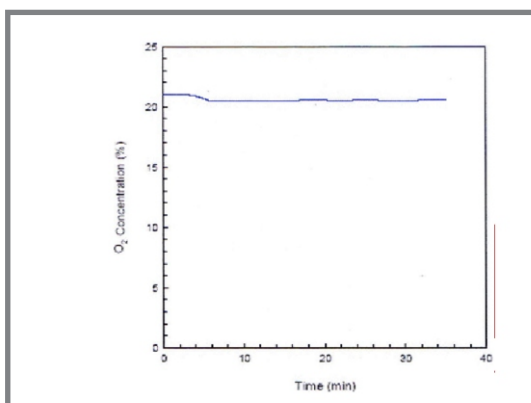
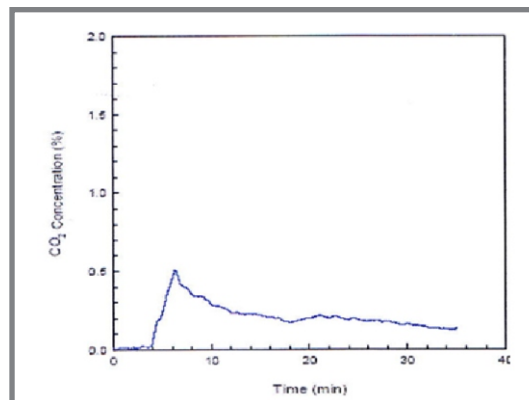
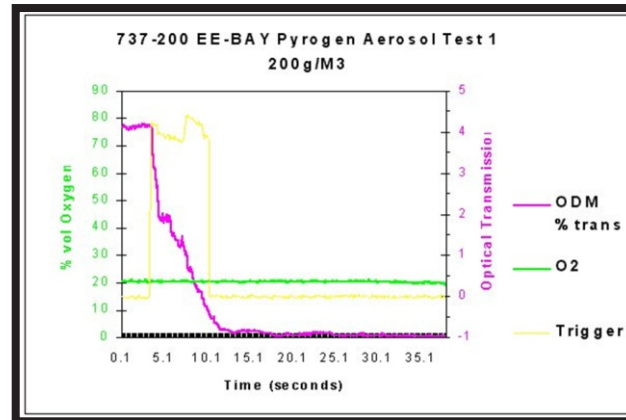


- Safe for personnel- non harmful to personnel at design application rates.

- Post fire cleanup is very low- aerosol suspends in air for quick and easy venting after discharge and non-toxic residual.

TEST RESULT

Toxic and Oxygen Concentration



Test conducted by Department of Mineral Resources, NSW Australia Hygiene Institute,
Gelsenkirchen, Germany.

WHY AEROSOL?

They need lower space for storage.

Relative Quantity

Aerosol	
Halon Agents	
Inert Gases	
CO2	

Also have lower effect on humans and environment.

	EFFECT ON HUMANS	EFFECT ON PROPERTY	EFFECT ON ENVIRONMENT
Foam and Water	Human protection necessary when used in fixed systems.	May be corrosive due to large water concentration Residue is harmful to delicate electronics	Residue can be difficult to dispose of and foam can be poisonous
Water	Generally not dangerous to humans when fighting fire	Can cause extensive damage to property	Can release harmful fumes and substances on extinguishment
CO2	Highly dangerous to humans in fire fighting concentrations.	Cooling effect causes condensation mist harmful to electronics	In general more CO2 is released from other sources
Inert Gases	May lead to inadequate oxygen supply to the brain when used alone	No damage caused	Naturally occurring components that do not pose a threat
Halon	Can be used in human presence but has been banned.	No damage caused	Harmful to the environment
Aerosol	Can be used in human presence in designed concentration and with proper precautions	No damage caused	Friendly to environment It is ozone friendly It is a Green Product



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