

Condensed Aerosol Fire Suppression

- A myriad of products have been created since the adoption of the Montreal Protocols to replace Halon in the Fire Protection Industry. Gases vary from inert systems containing CO₂ and Argon to Nitrogen and water mist. Halon substitutes for total flooding also contain the HFC's. Not until the creation of condensed aerosol was a substitute available that was:
 - 6 to 10 times more effective than Halon 1301 and 1211
 - Has an ODP (Ozone Depletion Potential) and GWP (Global Warming Potential) of 0 (zero)
 - Is non-toxic, non-corrosive and non-conductive.
 - Non-pressurized, requires no piping.
 - Non-oxygen depleting
 - Cost effective with a 15-year shelf life.
- **NFPA 2010 defines Condensed Aerosol as follows:**
 - **"An extinguishing medium consisting of finely divided solid particles, generally less than 10 microns in diameter, and gaseous matter generated by a combustion process of a solid aerosol-forming compound".**
- Condensed Aerosol fire suppression is recognized as one of the most effective and simple solutions in protecting enclosed areas such as electrical cabinets, electrical substations, transformers, switchboards, generator rooms, stores, machinery and equipment, engine compartments of vessels and automotive vehicles as well as many other risks from fires and associated damages.

- The extinguishing principle of condensed aerosol technology is unique—a special solid chemical when activated produces an aerosol which is the extinguishing medium itself. The extinguishing medium is not stored in a cylinder under pressure, it is produced in ‘REAL TIME’ only when required. The aerosol is a mixture of gases and micron-sized solids compressed in a block possessing gas-like distribution properties and long holding times.
- All condensed aerosol systems were developed to replace the Halon-like extinguishing systems that were mainly used in marine applications. All condensed aerosol extinguishing systems have advanced through years of scientific research and development.
- Condensed aerosol-based fire suppression systems extinguish and suppresses fires in seconds. They are 6 to 10 times more effective than Halon 1301 and effective for A, B, C class fires.
- Condensed aerosol systems are extremely successful in early stage and fully developed fires. Due to the great stability of the active compounds, Condensed aerosol particles can remain suspended in the air of an enclosure for up to 45 minutes, in some cases, preventing re-ignition at recommended concentrations.

Some benefits of the technology are:

- **Space saving** – Required space is only a fraction needed as compared to any other fire suppressant.
- **No piping, pressure cylinders, or vehicles are required.**
- **Easy maintenance** without the need for pressure testing, weighing, pressure/leak detection etc. Change the battery every 10-years.
- **Aerosol extinguishing systems are less expensive** compared to other gaseous systems (Halon replacements)
- **Uncomplicated parameters** – resulting in simplified deployments.

HOW DOES CONDENSED AEROSOL WORK?

- Condensed aerosol acts very similarly to Halon 1301, volumetrically.
- When a compartment is filled with a minimum quantity of extinguishing agent, it will
 - act directly on the ignition mechanism of the flame.
- The solid material of the Condensed Aerosol system, (*Potassium aerosol particulates*), enables interaction with the surface of the burning material. Consequently, the flames are rapidly extinguished and massive amounts of heat are quickly eradicated.
- Condensed aerosol does not affect the ozone layer, lower the oxygen level, or augment the pressure in any enclosure where it is activated. The process relies upon solids with a high activating energy brought together in a normal atmosphere.

HOW DOES CONDENSED AEROSOL WORK?

The fire tetrahedron is key to understanding how Condensed Aerosol works.

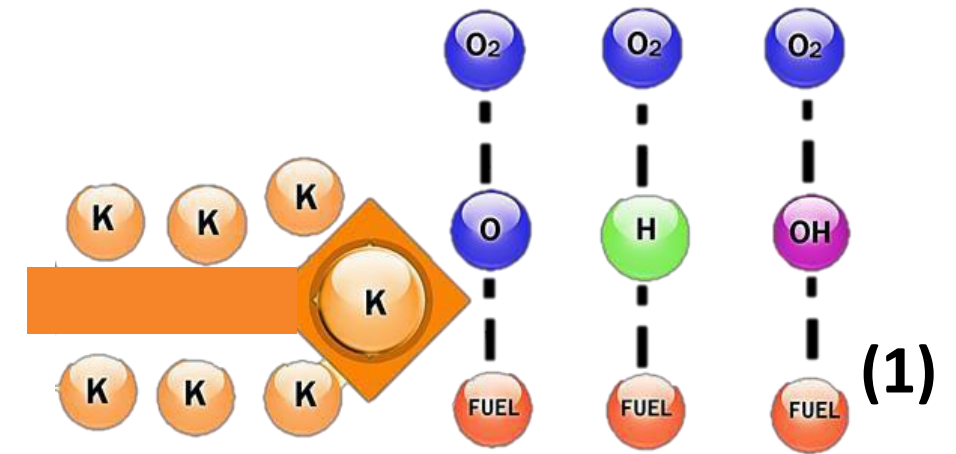
Condensed Aerosol works simultaneously on three components of the fire tetrahedron; heat, fuel, and the chemical reaction while oxygen levels are unaffected.

During combustion, free radicals and unstable atoms are formed. This elemental formation allows fire to exist

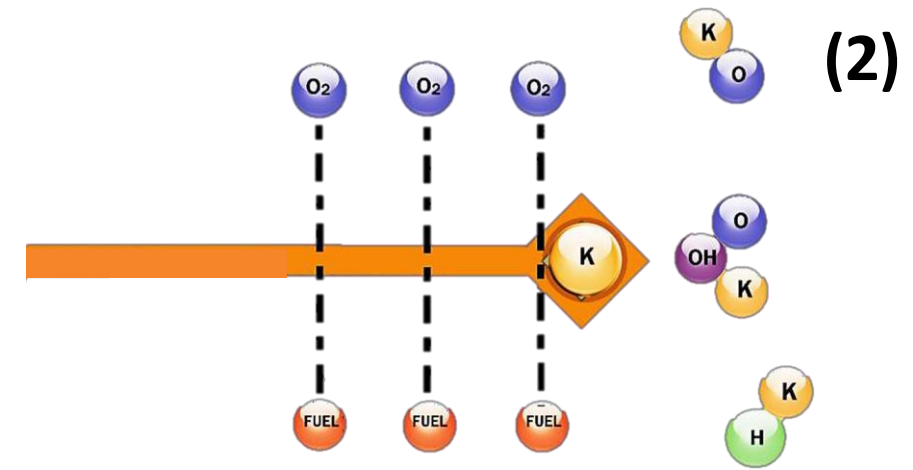


HOW DOES CONDENSED AEROSOL WORK?

Once the aerosol begins to discharge, a negative catalytic reaction takes place. (1)



The potassium compounds bind with the free radicals (Hydroxyls) that are released during combustion. This creates a new, stable molecule that can not combust. (2)



By creating stable molecules and eliminating the free radicals, the fire is suppressed.

BENEFITS OF USING CONDENSED AEROSOL



- **CONDENSED AEROSOL DOES NOT UTILIZE SUPER COOLING GASES**
- **CONDENSED AEROSOL IS NON-TOXIC, NON-CORROSIVE, NON-CONDUCTIVE**
- **CONDENSED AEROSOL IS NOT UNDER PRESSURE, ITS' AEROSOL CLOUD IS CREATED IN-SITU, WHEN IT IS ACTIVATED FROM A SOLID BLOCK.**
- **CONDENSED AEROSOL IS NOT HARMFUL TO PEOPLE OR ANIMALS**
- **CONDENSED AEROSOL IS NOT HARMFUL TO THE ATMOSPHERE**
- **ZERO ODP (OZONE DEPLETION POTENTIAL)**
- **ZERO GWP (GLOBAL WARMING POTENTIAL)**
- **CONDENSED AEROSOL DOES NOT INCREASE INTERNAL PRESSURE**
- **15 YEAR SHELF LIFE**

SUPPRESSALL™ FS2 AEROSOL FIRE SUPPRESSION TOOL



BENEFITS

Drastically Lowers the Temperature quickly.

- **An SUPPRESSALL™ FS2 can lower the temperature by as much as 1,000°f in less than 60 seconds.**
- **Lowering the temperature makes an interior attack using conventional firefighting methods much safer for all firefighters.**

Other benefits include:

- SAVES LIVES AND PROPERTY
- SAVES UP TO 80% REDUCTION IN WATER USAGE
- DRASTIC REDUCTION IN THE EMISSION OF ENVIRONMENTAL POLLUTANTS DUE TO BURNING
- PRESERVES THE INTEGRITY OF ANY STRUCTURE INVOLVED IN AN EARLY-STAGE FIRE
- PRESERVES THE FIRE SCENE FOR ARSON INVESTIGATIONS
- 15 YEAR SHELF LIFE
- DOES NOT REMOVE OXYGEN
- DOES NOT UTILIZE SUPER COOLING GASES
- IS NON-Toxic, NON-CORROSIVE, and NON-CONDUCTIVE
- IS NOT HARMFUL TO PEOPLE OR ANIMALS
- IS NOT HARMFUL TO THE ATMOSPHERE
- ZERO ODP (**O**ZONE **D**EPLETION **P**OТENTIAL) / ZERO GWP (**G**LOBAL **W**ARMING **P**OТENTIAL)
- DOES NOT INCREASE INTERNAL PRESSURE

Safety on the fire ground for the First Responder

- An SUPPRESSALL™ FS2 can fight a fire without putting anyone in danger.
- The first on scene can deploy an SUPPRESSALL™ FS2 without entering a structure and before other equipment has arrived.
- An SUPPRESSALL™ FS2 can handle a structure fire involving multiple rooms..

The SUPPRESSALL™ FS2 buys time for every crew that utilizes it! The first-in is not usually an engine crew. An SUPPRESSALL™ FS2 can give you the needed time until an engine crew arrives on scene and is ready to fight the fire

For Hard to Access areas

When strategically deployed, an SUPPRESSALL™ FS2 can attack fire in areas that are difficult or impossible for crews to access. Attic, basement and confined space fires can be suppressed with an SUPPRESSALL™ FS2 so that conventional methods can be safely employed.

Early deployment of an SUPPRESSALL™ FS2 unit into an attic will eliminate hotspots and control fire that tries to escape to the roof.

An attic is a closed compartment that has the ability to perfectly contain the aerosol. SUPPRESSALL™ aerosol can remain buoyant in a sealed enclosure for about 45 minutes.