



CLEANGUARD+

Extinguish the fire,
not your business.



With the rise of sustainability initiatives, the fire suppression industry faces a dilemma: How to guard against fires without unnecessarily introducing additional chemicals into the environment. Many fire extinguishing agents contain HFCs, or hydrofluorocarbons, a potent greenhouse gas.

HFCs – A Regulatory Timeline

1987

The UN's Montreal Protocol on Substances that Deplete the Ozone Layer is ratified unanimously.

2016

The Montreal Protocol is amended to include the phase down of HFCs.

2022

Congress enacts the American Innovation and Manufacturing (AIM) Act of 2020, which directs the EPA to address HFCs.

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In 1987, the members of the United Nations (UN) adopted the Montreal Protocol on Substances that Deplete the Ozone Layer, a landmark multilateral environmental agreement that regulates the production and consumption of ozone depleting substances (ODS).

As amended in 2016, the Montreal Protocol called for the phase down of HFCs. While they do not deplete the stratospheric ozone layer, some of them have high global warming potential (GWP). The amendment approved a timeline for the gradual HFC reduction of 80-85% by the late 2040s.

To date, the Protocol has phased out 98% of ozone depleting substances globally, compared to 1990 levels. The UN asserts that, because most of these substances are potent greenhouse gases, the Montreal Protocol has contributed significantly to the protection of the global climate system.

Similar to the Montreal Protocol, the American Innovation and Manufacturing (AIM) Act of 2020 is domestic legislation that directs the EPA to phase down the production and consumption of listed HFCs, many of which are found in traditional extinguisher agents.

According to the EPA, "To pursue sustainability is to create and maintain the conditions under which humans and nature can exist in productive harmony to support present and future generations." Fortunately, there are powerful, effective fire suppression options that do just that.

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The first is good old-fashioned water mist. The Tyco AquaMist ULF fire suppression system creates a mist of very fine water droplets by forcing clean water out of a specially designed nozzle. As the water evaporates, it significantly cools the fire combustion zone and displaces the oxygen around the fire. Water is a very clean and natural suppression agent, with no issues related to GWP or ODP (ozone depletion potential). Therefore, it's safe for human beings. Additionally, the AquaMist ULF has a low flow rate, which minimizes water damage to the facility.

Another sustainable fire suppression option is a gaseous system, which floods a whole room with a gaseous agent to suffocate a fire. The ANSUL® SAPPHIRE PLUS 70-Bar System is one such system. It uses 3M™ Novec™ 1230 Fire Protection Fluid, an agent used at concentrations of only 4.5 to 5.9% by volume, which is well below the maximum 10% concentration for safe exposure to human beings. It has zero ODP, a GWP rating of 1.0, and an atmospheric lifetime of between three and five days.

A third option for sustainable fire suppression is a clean, electrically non-conductive agent like FK-5-1-12. It has an ODP rating of 0.0, a GWP rating of less than 1.0, and an atmospheric lifetime of approximately one week. FK-5-1-12 is the agent in the new ANSUL® CLEANGUARD+ extinguisher. What's more, Johnson Controls is currently migrating the SAPPHIRE product line to FK-5-1-12, as well.

Plus, FK-5-1-12 is not scheduled to be phased out under the Montreal Protocol, which will help its cost to remain stable, unlike less-sustainable traditional agents, which are becoming

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limited resources. In addition, exposure to FK-5-1-12 is safer for human beings than traditional agents are, according to Cardiotox LOEL and Cardiotox NOAEL Acute Toxicity rankings. That means FK-5-1-12 can be more safely discharged in considerably smaller spaces than traditional agents can.

What's more, FK-5-1-12 can be a boon to certain enterprises that need to guard against fires while safeguarding sensitive, high-value equipment. The agents in traditional fire extinguishers leave residue behind, which can damage high-tech devices and other delicate property. Sustainable FK-5-1-12, on the other hand, leaves behind no residue and causes no damage to sensitive electronics and plastics.

Thus, there's no need to clean up after using FK-5-1-12, so there's no disruption to operations. Affected industries include data processing and storage, pharmaceutical production, clean manufacturing and health care facilities. Even museums and libraries can benefit with their rare, delicate collections.

To learn more about how ANSUL® brand products can help you provide clean, green fire protection, visit www.ansul.com

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