

## **Gas Phase Flame Retardants**

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This lecture provides an overview of the inhibition mechanism of chain reactions in hydrocarbon flames. It should be understood that the efficiency of chemical inhibitors varies significantly depending on the type of flame, especially large differences being observed between pre-mixed model flames and diffusion flames, the latter typically found in uncontrolled fires. For many commercial and new developmental flame retardants the mechanism of delivery of the active flame inhibiting species from the condensed phase to the flame plays a more important role than inhibition efficiency itself. Most successful flame retardants show a combination of different flame retardant actions, the gas phase flame inhibition being one of these mechanisms. This lecture will show examples of gas phase and condensed phase synergistic mechanisms. The gas phase action of common flame retardants will be discussed.