

Health and Safety Requirements for Halon Replacements – an Application-Based View

Presenter: To Be Determined

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The long search for Halon replacements in aviation fire protection systems has met with limited success so far. After decades of research and dozens of candidates, all commercial transports delivered to freight or passenger carriers continue to use Halon 1301 for engine and APU fire extinguishing and cargo fire suppression.

These are challenging applications, but an often unrecognized challenge has been over-constraint. Most searches begin by setting Halon 1301's performance as the floor in all characteristics. This has led to some good candidates being ignored or prematurely rejected. One area this happens is in health and safety.

Halon is a fairly benign agent, in terms of its effect on personal within the vicinity of a discharge. Many other candidate agents do not measure up, in terms of the traditional measures of LOAEL and NOAEL. A more comprehensive approach, which identifies potential exposure scenarios, frequencies, and durations, as well as looking at all available information on health impact, can reveal that many candidates are acceptable in terms of risk, when weighed against probabilities and currently available mitigations.