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REPUBLIC OF COSTA RICA  
GENERAL DIRECTION OF CIVIL AVIATION  
Airnavigation Department  
AIS/MAP  
P. O. BOX 5026 -1000  
SAN JOSE – COSTA RICA

**AIC**  
Series A

21/14  
DEC 01, 2014

## AIR

### HALON 1211 SUBSTITUTE ON BOARD PORTABLE FIRE EXTINGUISHERS

The General Direction of Civil Aviation, communicates to all aircraft operators through the Department of Airworthiness, the requirements of MRAC OPS 1.790 paragraph provides in paragraph a) 2)

... "At least one hand fire extinguisher, containing Halon 1211 (bromochlorodifluoromethane  $\text{CBrClF}_2$ ) must be conveniently located in the cockpit for use by the flight crew, or equivalent as the extinguishing agent."

As an extinguishing agent Halon 1211 equivalent can be used:

#### HCFC-mix C

It is a "drop-in" extinguishing agent with respect to Halon 1211. It is a clean agent applicable to portable fire extinguishers and local applications. It is composed of a mixture of halogenated hydrocarbons and detoxifying additive which reduces the amount of decomposition products formed in the presence of the flame.

The HCFC-mixture C is not a risk to humans by itself, although the decomposition products may assume a risk. Therefore, a detoxifying additive when exposed to high flame temperatures reduce toxic acid fumes and inerted more toxic halogenated compounds is incorporated. HCFC-mixture C has an ozone depletion potential (ODP) of 0.017, greenhouse potential (GWP) of 0.068 and a very limited atmospheric lifetime (ALT) (3.3 years).

It is effective for fires of class A, B and C. Its high extinction and low toxicity, together with its low environmental impact makes it useful for the following situations: meeting systems, control rooms, chemical laboratories and scientists, vehicles military cargo and passenger compartments in aircraft handling areas or storage of flammable liquids, protection of works of art, museums, etc. HCFC-mix E





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-2-

You can effectively replace Halon 1211 in areas where there are sensitive or not substitutable equipment may be damaged beyond repair water, foam, powder or carbon dioxide.

### INERGEN

It is the marketing name (and trademarked by the company Wormald Mather + Platt) of a gas designed for firefighting. It is suitable for electric fire and closed rooms.

### Halotron I

Following regulatory requirements of NFPA 2001, "Systems and Clean Extinguishing Agents" which defines and demands to be "electrically nonconductive be a gaseous volatile product or that leaves no residue on evaporation" the Halotron™ 1 has been an effective solution, is environmentally acceptable replacement for Halon 1211.

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