TABLE 1

ACCEPTABLE HALON ALTERNATIVES UNDER EPA'S SNAP PROGRAM

Total Flooding Agents

AGENT	CONDITIONS	COMMENTS
IG-01 (Argotec)		See safety recommendation 1. See additional comments 1,2,5.
IG-55 (Argonite)		See safety recommendation 1. See additional comments 1,2,5.
IG-100 (NN100)		See safety recommendation 1. See additional comments 1,2,5.
IG-541 (Inergen)		See safety recommendation 1. See additional comments 1,2,5. This agent contains CO_2, which is intended to increase blood oxygenation and cerebral blood flow in low oxygen atmospheres. The design concentration should result in no more than 5% CO_2.
HFC-227ea (FM-200, FE-227)		See safety recommendation 1. See additional comments 1,2,3,4,5.
HFC-125 (FE-25)		See safety recommendation 1. See additional comments 1,2,3,4,5.
HFC-23 (FE-13)		See safety recommendation 1. See additional comments 1,2,3,4,5.
HCFC-124 (FE-241)		See safety recommendation 1. See additional comments 1,2,3,4,5.
HCFC-Blend A (NAF S-III)		See safety recommendation 1. See additional comments 1,2,3,4,5.
HFC-134a		Use of blends containing this agent should be in accordance with the safety guidelines in the latest edition of the NFPA 2001 Standard for Clean Agent Fire Extinguishing Systems. See additional comments 1,2,3,4,5,6.
HCFC-22		Use of blends containing this agent should be in accordance with the safety guidelines in the latest edition of the NFPA 2001 Standard for Clean Agent Fire Extinguishing Systems. See additional comments 1,2,3,4,5,6.
HFC-236fa (FE-36)	See narrowed use limits A.	See safety recommendation 1. See additional comments 1,2,3,4,5.
C_3F_8 (CEA-308)	See narrowed use limits B.	See safety recommendation 1. See additional comments 1,2,3,4,5.
C_4F_{10} (CEA-410)	See narrowed use limits B.	See safety recommendation 1. See additional comments 1,2,3,4,5.
CF_3I (Triodide)	Use only in normally unoccupied areas.	See safety recommendation 1. See additional comments 1,2,3,4,5.
Halotron II	Use only in normally unoccupied areas.	See safety recommendation 1. See additional comments 1,2,3,4,5.
C6-fluoroketone (Novec 1230)		See safety recommendation 1. See additional comments 1,2,3,4,5.
HFC227-BC	Sodium bicarbonate release in all settings should be targeted so that increased pH level would not adversely affect exposed individuals. Users should provide special training to individuals required to be in environments protected by HFC227-BC extinguishing systems. Each HFC227-BC extinguisher should be clearly labeled with the potential hazards from use and safe handling procedures.	Use of the agent, HFC227ea, should be in accordance with the safety guidelines in the latest edition of the NFPA 2001 Standard for Clean Agent Fire Extinguishing Systems. See additional comments 1,2,3,4,5.
Envirogel with ammonium polyphosphate additive		Use of this agent should be in accordance with the safety guidelines in the latest edition of the NFPA 2001 Standard for Clean Agent Fire Extinguishing Systems, for whichever hydrofluorocarbon gas is employed. See additional comments 1,2,3,4,5.
Envirogel with any additive other than ammonium polyphosphate	Use only in normally unoccupied areas.	Use of this agent should be in accordance with the safety guidelines in the latest edition ofthan the NFPA 2001 Standard for Clean Agent Fire Extinguishing Systems, for whichever hydrofluorocarbon gas is employed. See additional comments 1,2,3,4,5.
Water Mist	Potable water, natural seawater	See NFPA 750
Insert Gas/Powdered Aerosol Blend (FS 0140)	Unoccupied areas only.	See additional comment 2.
Powdered Aerosol A (SFE)	Unoccupied areas only.	
Powdered Aerosol C (PyroGen, Soyuz)	Unoccupied areas only.	
Carbon Dioxide		

Additional Comments

1. Should conform with relevant OSHA requirements, including 29 CFR 1910, Subpart 1910.160 and 1910.162.
2. Per OSHA requirements, protective gear (SCBA) should be available in the event personnel should reenter the area.
3. Discharge testing should be strictly limited to that which is essential to meet safety or performance requirements.
4. The agent should be recovered from the fire protection system in conjunction with testing or servicing, and recycled for later use or destroyed.
5. EPA has no intention of duplicating or displacing OSHA coverage related to the use of personal protective equipment (e.g. respiratory protection), fire protection, hazard communication, worker training or any other occupational safety and health standard with respect to halon substitutes.
6. The NFPA 2001 Standard for Clean Agent Fire Extinguishing Systems gives guidelines for blends that contain HFC-134a or HFC-22 and other acceptable total flooding agents, rather than referring to HFC-134a or HFC-22 alone.

Safety Recommendations

1. Use of this agent should be in accordance with the safety guidelines in the latest edition of the NFPA 2001 Standard for Clean Agent Fire Extinguishing Systems.

Narrowed use Limits

A. Acceptable when manufactured using any process that does not convert perfluoroisobutyIcne (PFIB) directly to HFC-236fa in a single step, for use in explosion suppression and explosion inertion applications, and for use in fire suppression applications where other non-PFC agents or alternatives are not technically feasibe due to performance or safety requirements:

a. because of their physical or chemical properties, or

b. where human exposure to the extinguishing agents may result in failure to meet safety guidelines in the latest edition of the NFPA 2001 Standard for Clean Agent Fire Extinguishing Systems.

B. Acceptable for non-residential uses where other alternatives are not technically feasible due to performance or safety requirements:

a. because of their physical or chemical properties, or

b. where human exposure to the extinguishing agents may result in failure to meet safety guidelines in the latest edition of the NFPA 2001 Standard for Clean Agent Fire Extinguishing Systems.