



**Halon Substitutes Under SNAP as of January 2, 2009**

**SNAP Information: <http://www.epa.gov/ozone/snap>**

EPA has created the Significant New Alternatives Policy (SNAP) Program under section 612 of the Clean Air Act Amendments. SNAP evaluates alternatives to ozone-depleting substances. Substitutes are reviewed on the basis of ozone depletion potential, global warming potential, toxicity, flammability, and exposure potential as described in the March 18, 1994 final SNAP rule (59 FR 13044). Lists of acceptable and unacceptable substitutes will be updated periodically in the Federal Register. The following SNAP notices and subsequent final rules are included in this list: August 26, 1994 (59 FR 44240), January 13, 1995 (60 FR 3318), June 13, 1995 (60 FR 31092), July 28, 1995 (60 FR 38729), February 8, 1996 (61 FR 4736), May 22, 1996 (61 FR 25585), September 5, 1996 (61 FR 47012), October 16, 1996 (61 FR 54030), March 10, 1997 (62 FR 10700), June 3, 1997 (62 FR 30275), February 24, 1998 (63 FR 9151), May 22, 1998 (63 FR 28251), January 26, 1999 (64 FR 3861), April 28, 1999 (64 FR 22981), April 26, 2000 (64 FR 30410), April 26, 2000 (65 FR 24387), January 29, 2002 (67 FR 4185), December 20, 2002 (67 FR 77927), August 21, 2003 (68 FR 50533), October 1, 2004 (69 FR 58903), March 29, 2006 (71 FR 15589), September 27, 2006 (71 FR 56359), and January 2, 2009 (74 FR 21).

**Acceptable Substitutes for Halon 1211 Streaming Agents Under the Significant New Alternatives Policy (SNAP) Program as of January 2, 2009**

Substitute	Trade Name	Comments
HCFC-123	FE-232	Non-residential uses only.
HCFC-124	FE-241	Non-residential uses only.
[HCFC Blend] B	Halotron I	Non-residential uses only.
[HCFC Blend] C	NAF P-III	Non-residential uses only.
[HCFC Blend] D	Blitz III	Non-residential uses only.
Gelled Halocarbon/Dry Chemical Suspension	Envirogel	Allowable in the residential use market.
[Surfactant Blend] A	Cold Fire, FlameOut	
Water Mist Systems using Potable or Natural Sea Water		
Carbon Dioxide		
Dry Chemical		
Water		
Foam		

**Acceptable Substitutes for Halon 1211 Streaming Agents Subject to Narrowed Use Limits  
under the Significant New Alternatives Policy (SNAP) Program as of January 2, 2009**

Substitute	Trade Name	Limitations	Comments
[HCFC Blend] E	NAF P-IV	Acceptable in nonresidential uses only.	As with other streaming agents, EPA recommends that potential risks of combustion byproducts be labeled on the extinguisher (see UL 2129).  See comments 1, 2.
HFC-227ea	FM-200	Acceptable in nonresidential uses only.	See comments 1, 2
HFC-236fa		Acceptable in nonresidential uses when manufactured using any process that does not convert perfluoroisobutylene (PFIB) directly to HFC-236fa in a single step.	See comments 1, 2, 3
CF <sub>3</sub> I		Acceptable in nonresidential uses only.	
C <sub>6</sub> F <sub>14</sub>	PFC-614, CEA-614	Acceptable for nonresidential uses where other alternatives are not technically feasible due to performance or safety requirements because of their physical or chemical properties.	Users should observe the limitations on PFC acceptability by making reasonable effort to undertake the following measures:  (i) conduct an evaluation of foreseeable conditions of end use; (ii) determine that the physical or chemical properties or other technical constraints of the other available agents preclude their use; and (iii) determine that human exposure to the other alternative extinguishing agents may result in failure to meet applicable use conditions; <b>Documentation of such measures should be available for review upon request.</b>  See additional comments 1, 2

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Substitute	Trade Name	Limitations	Comments
C6-perfluoroketone (1,1,1,2,2,4,5,5,5-nonafluoro-4-(trifluoromethyl)-3-pentanone)	Novec 1230	Acceptable in nonresidential uses only.	<p>For operations that fill canisters to be used in streaming applications, EPA recommends the following:</p> <ul style="list-style-type: none"> <li>- install and use adequate ventilation ;</li> <li>- clean up all spills immediately in accordance with good industrial hygiene practices; and</li> <li>- provide training for safe handling procedures to all employees that would be likely to handle containers of the agent or extinguishing units filled with the agent.</li> </ul> <p>See additional comments 1, 2, 4, 5</p>
H Galden HFPEs		Acceptable in nonresidential uses only.	<p>For operations that fill canisters to be used in streaming applications, EPA recommends the following:</p> <ul style="list-style-type: none"> <li>- install and use adequate ventilation ;</li> <li>- clean up all spills immediately in accordance with good industrial hygiene practices; and</li> <li>- provide training for safe handling procedures to all employees that would be likely to handle containers of the agent or extinguishing units filled with the agent.</li> </ul> <p>See additional comments 1, 2, 4, 5</p>

Additional Comments

1. Discharge testing and training should be strictly limited only to that which is essential to meet safety or performance requirements.
2. The agent should be recovered from the fire protection system in conjunction with testing or servicing, and recycled for later use or destroyed.
3. Acceptable for local application systems inside textile process machinery.
4. As with other streaming agents, EPA recommends that potential risks of combustion by-products be labeled on the extinguisher (see UL 2129)
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.