

Environmental Choice^M Program

CERTIFICATION CRITERIA DOCUMENT

CCD-022



Product: Clean Agent Fire Suppressant System

Preamble

Environment Canada's Environmental Choice^M Program is pleased to publish the following national guideline on *clean agent fire suppressant systems*.

The Environmental Choice Program is designed to support a continuing effort to improve and/or maintain environmental quality by reducing energy and materials consumption and by minimizing the impacts of pollution generated by the production, use and disposal of goods and services available to Canadians.

Clean agent fire suppressant systems are preferred to combat fires in areas containing computers, electronics or other sensitive machines and equipment (including, *inter alia*, control rooms, computer mainframe rooms and laboratory. The "clean" agent is a chemically unreactive fluid that serves to suppress and contain flames through the mechanism of oxygen deprivation. While chemically unreactive, many clean agent options (halons and other halogenated hydrocarbons such as HCFC's and HFC's) pose a threat to stratospheric ozone and/or are potent greenhouse gases. This issue may be addressed through marketing of fire suppressant systems which use other inert fire-suppression agents with no ozone-depleting or global-warming potential (ODP and GWP, respectively).

Based on a review of currently available life cycle information, the following product category requirements will produce an environmental benefit through a reduction in adverse emissions to the environment.

Notice

Throughout this document, any reference to a standard or guideline means to its latest edition.

The Environmental Choice Program (ECP) reserves the right to accept equivalent test data for the test methods specified in this document.

Interpretation

1. In this set of requirements, please note the following definitions:

“clean agent fire suppressant system” means a pre-engineered system having predetermined flow rates, nozzle pressures and specified quantities of fire suppression agents. The system is intended to suppress a hazard within the type and size specified by a testing laboratory based on actual fire tests;

“fire suppression agent” means a substance (generally a fluid) utilized by a fire suppressant system to contain and/or extinguish flames through the mechanism of oxygen-deprivation;

“greenhouse gas” means an anthropogenically-generated gas suspected of enhancing the atmosphere’s natural heat-trapping abilities, thus leading to potential alteration of natural climatic patterns; relevant gases to include, *inter alia*, carbon dioxide, chlorofluorocarbons (CFC’s), hydrochlorofluorocarbons (HCFC’s) and hydrofluorocarbons (HFC’s);

“Ozone Depleting Substance” means halogenated (chlorinated or brominated) hydrocarbons recognized by the Montreal Protocol as having the potential to adversely affect stratospheric ozone; a list of these fluids relevant to fire suppression is presented in Appendix 1;

“safe period of human exposure” means the number of minutes a human may be safely exposed to the fire suppression agent as defined in the *National Fire Protection Association 2001 Standard on Clean Agent Fire Extinguishing Systems, Section 1-6.1.3*, recognizing that the act of automated fire-suppression necessitates starving the fire’s immediate environment of oxygen; leading, as well, to short-term oxygen deprivation for humans.

General Requirements

2. To be authorized to carry the EcoLogo^M, the *Clean Agent Fire Suppressant System* must:
 - (a) meet or exceed all applicable governmental and industrial safety and performance standards; and
 - (b) be provided in such a manner that all steps of the process, including the disposal of waste products arising therefrom, will meet the requirements of all applicable governmental acts, by laws and regulations including, for facilities located in Canada, the *Fisheries Act* and the *Canadian Environmental Protection Act* (CEPA).

Product Specific Requirements

3. To be authorized to carry the EcoLogo^M, the *Clean Agent Fire Suppressant System* must:
 - (a) be listed by the Underwriters’ Laboratories of Canada (ULC) as complying with *ULC 2127: Standard for Inert Gas Clean Agent Extinguishing System Units*;

- (b) utilize a fire suppression agent that contains no:
 - i) Ozone Depleting Substances,
 - ii) greenhouse gases,
 - iii) formaldehyde, or
 - iv) aromatic solvents;
- (c) have a safe period for human exposure that meets the requirements of the National Fire Protection Association's *NFPA 2001 Standard on Clean Agent Fire Extinguishing Systems*;
- (d) be accompanied by a manufacturer's instruction manual that includes, at least, instructions for installation and the limitation on hazards (i.e., size and type of fire) that can be protected by the system; and
- (e) consist entirely of hardware components that:
 - i) contain no heavy metals, and
 - ii) are designed for re-use.

Verification

- 4. To verify a claim that a product meets the criteria listed in this document, the ECP will require access, as is its normal practice, to relevant purchasing records, quality control and production records and the right of access to production facilities on an announced basis.
- 5. If applicable, compliance with requirement 2(b) shall be attested to by a signed statement of the Chief Executive Officer or the equivalent officer of the licensee. The ECP shall be advised in writing immediately by the licensee of any noncompliance which may occur during the term of the license. On the occurrence of any noncompliance, the license may be suspended or terminated as stipulated in the license agreement.



Conditions for EcoLogo Use

- 6. The EcoLogo may appear on wholesale or retail packaging, or on the product itself, provided that the product meets the requirements in this document.
- 7. A criteria statement must appear with the EcoLogo whenever the EcoLogo is used in association with the *Clean Agent Fire Suppressant System*. The intent of this statement is to provide clarification as to why the product was certified and to indicate constraints to which the certification is limited. This is to ensure no ambiguity over, or misrepresentation of, the reason(s) for certification.

ECP suggested criteria statement wording for this product type is "*Low Ozone-depleting Fire Suppressant System*". The licensee may propose other wording for the criteria statement, but any such proposed wording must be approved by the Environmental Choice Program.

- 8. All licensees and authorized users must comply with the ECP's *Guide to Proper Use of the EcoLogo^M* regarding the format and usage of the EcoLogo.

9. Any accompanying advertising must conform with the relevant requirements stipulated in this guideline, the license agreement and the ECP's *Guide to Proper Use of the EcoLogo^M*.

	<p>For more information about the EcoLogoTM Program, please direct your inquiry to: The EcoLogoTM Program 171 Nepean Street, Suite 400 Ottawa, ON, K2P 0B4 Phone: 1.800.478.0399 www.ecologo.org</p>	
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Appendix 1
Ozone Depleting Potentials (ODP) and Global Warming Potential (GWP) of Fire-suppression Agents

Gas	ODP	GWP (100 years)
Halon 1211 (CClBrF ₂)	4.1	1300
Halon 1301 (CBrF ₃)	12.5 - 13.0	5600 - 6900
FC-2-1-8 (C ₃ F ₈)	0*	7000 - 8600
FC-3-1-10 (C ₄ F ₁₀)	0*	7000 - 8600
HCFC-123 (CHCl ₂ CF ₃)	0.02	93
HCFC-22 (CHClF ₂)	0.05	1700
HCFC-124 (CHClF ₂ CF ₃)	<0.2	1500
HCF-125 (CHF ₂ CF ₃)	0*	3200
HFC-227ea (CF ₃ CHFCF ₃)	0*	3300
HFC-23 (CHF ₃)	0*	12100
HFC-236fa (CF ₃ CH ₂ CF ₃)	0*	8000
FIC-1311(CF ₃ I)	0*	<<1
IG-01 (Argon)	0	n/a
IG-100 (Nitrogen)	0	n/a
IG-55 (N ₂ +Ar)	0	n/a
IG-541 (N ₂ + Ar + CO ₂)	0	(CO ₂ = 1 by def'n)

Sources: Intergovernmental Panel of Climate Change, 1995; USEPA, 2001, National Fire Protection Association, 2001; Lenz and Cozzari, *Emissions and Air Quality*, Society of Automotive Engineers, 1999.

* HFC and other halogenated hydrocarbons have ODP = 0 by definition, owing to a lack of chlorine; most of these molecules do, however have significant GWP's.