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Code of Practice for Use of Recycled Halogenated Clean Agents

PURPOSE

This voluntary code of practice is intended to provide basic guidelines for companies engaged in the recovery and recycling of halogenated clean agents in order to:

- Adhere to US EPA, NFPA 2001 and NFPA 10 requirements.
- Ensure the quality of recycled clean agent.
- Promote the safe handling of clean agents.
- Prevent contamination of available supplies of recycled clean agent.
- Minimize emissions to the atmosphere during recovery of clean agents.

The code was also developed to provide assurance to the public that companies subscribing to the code are committed to recovering and recycling halogenated clean agents in a safe and environmentally sound manner that meets the required quality standards.

BACKGROUND

Halogenated clean agents (referred to as "clean agents") are fluorochemicals used as fire extinguishing agents in fixed fire protection systems as well as in portable fire extinguishers. When extinguishing units are no longer needed for their original use and are removed from service, the clean agent should be recovered and recycled for later use. The US Environmental Protection Agency (EPA) under its Significant New Alternatives Policy (SNAP) program states that halogenated clean agents "should be recovered from the fire protection system in conjunction with testing or servicing, and recycled for later use or destroyed." NFPA Standard 2001 likewise requires either recycling or destruction of halogenated clean agents in an environmentally sound manner. NFPA Standard 10 requires the removal of halogenated agent fire extinguishers be performed using a closed recovery system.

RECOMMENDED PRACTICES

The following outlines the voluntary measures that companies subscribing to this code of practice have agreed to follow.

Operations

A. Operate in accordance with requirements of NFPA 2001 or NFPA 10.

B. Recover or recycle clean agents during servicing or decommissioning of an extinguishing unit using suitable recovery or recycling equipment.

C. Thoroughly evacuate and/or purge with dry nitrogen or argon, as applicable, all equipment used to recover, store and transfer clean agent prior to each use to prevent contamination of agent with other agents, water and foreign substances.

D. When necessary to bring clean agent into compliance with NFPA 2001 requirements, process recovered clean agent by filtering, drying, distillation, or other means prior to sale or reuse in fire extinguishing systems.
Note: Clean agent that is found to contain non-condensable non-flammable gas (e.g. nitrogen) but otherwise meets specifications in NFPA 2001 should be considered acceptable for reuse.

E. Prior to sale or reuse in fire extinguishing systems, recovered clean agent shall be tested and certified to meet NFPA 2001 requirements or ASTM specifications using normal industry-accepted procedures such as those provided in international standards (e.g. ASTM, AHRI)[1] or by the agent manufacturer.
Note: AHRI 700-certified laboratories are among the laboratories that may be capable of testing to these standards.[2]

F. If recovered clean agent is found to contain contaminants that make it technically or economically unfeasible to bring into compliance with the quality specifications in NFPA 2001, arrange for destruction of the agent in an environmentally sound manner in accordance with applicable laws and regulations.

G. Collect and dispose of wastes from the reclamation process in accordance with all applicable laws and regulations.

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Safety

H. Ensure that all technicians who operate or supervise the use of recovery or recycling equipment receive training from the manufacturer of the equipment or through an equivalent training program.

I. Provide Hazardous Materials Training (HAZMAT) for technicians and other employees involved in handling and shipment of clean agents as required by United States Department of Transportation (DOT) regulations 49 CFR.

J. Follow all applicable regulations, such as United States Department of Transportation (DOT) and Transport Canada, for the storage, packaging and shipment of clean agents.

K. Follow safety guidelines contained in the Safety Data Sheet (SDS) for the clean agent.

Equipment

L. Use recovery or recycling equipment in accordance with the recovery/recycling equipment manufacturer's instructions.

M. Check recovery, recycling, and charging equipment to ensure it has no detectable leaks at intervals recommended by the equipment manufacturer or every 12 months, whichever is more frequent.

N. Repair leaks in agent storage, recovery, recycling, or charging equipment before use.

Record Keeping

Retain records of the recovery, recycling, and reclamation of clean agents for a minimum of three years. Records should include the following information.

1. Test and certification records documenting the quality of each batch of recycled clean agent.
2. Maintenance records for recovery and recycling equipment.
3. Documentation of training for personnel performing or supervising clean agent recovery or recycling.
   Note: Retention time for employee HAZMAT training records is governed by PHMSA DOT regulations 49 CFR.

DEFINITIONS

Halogenated Clean Agent: Any of the fluorocarbon compounds listed below.
HFC-23 (trifluoromethane, FE-13™)
HFC-125 (pentafluoroethane, FE-25™)
HFC-227ea (1,1,1,2,3,3,3-heptafluoropropane, FM-200™)
HFC-236fa (1,1,1,3,3,3-hexafluoropropane, FE-36™)
FK-5-1-12 (dodecafluoro-2-methylpentan-3-one, Novec™ 1230 Fluid)
HCFC Blend B (Halotron™ I)

NFPA 2001: National Fire Protection Association Standard on Clean Agent Fire Extinguishing Systems, current edition.

NFPA 10: National Fire Protection Association Standard for Portable Fire Extinguishers, current edition.

Recovered Clean Agent: Clean agent that has been removed from a system and kept for future use or until it is destroyed, without necessarily testing or processing it in any way.

Recycled Clean Agent: Clean agent that has been recovered, tested, and processed as necessary to bring it into compliance with the quality requirements of NFPA 2001 or ASTM quality specifications.

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[1] ASTM and AHRI Standards for determining the quality of HFC-227ea, HFC-125, HFC-23, HCFC Blend B and HFC-236fa are currently published.
[2] A list of AHRI 700-certified laboratories is available at the following link:

http://www.ahridirectory.org/ahridirectory/pages/rrr/RRREDirectory.pdf

This voluntary code of practice is endorsed by the Fire Equipment Manufacturers Association (FEMA), Fire Suppression Systems Association (FSSA) and the National Association of Fire Equipment Distributors (NAFED). Members of these organizations contributed to its development.

FIRE EQUIPMENT MANUFACTURERS' ASSOCIATION
Saving Lives, Protecting Property.

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