



# HALON RECYCLING CORPORATION

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## CODE OF PRACTICE FOR HALON RECYCLING COMPANIES

### PURPOSE

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

- Adhere to US EPA regulations and NFPA standard requirements.
- Ensure the quality of recycled halons.
- Promote safe handling of recycled halons.
- Prevent contamination of available supplies of recycled halons.
- Minimize emissions to the atmosphere during recovery of halons.

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

### BACKGROUND

Halons are brominated halocarbons used as fire extinguishing clean 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 halons must be recovered and recycled for later use or destroyed. The US Environmental Protection Agency (EPA) has determined that emissions of halons used in fire suppression equipment contribute to ozone depletion and has published [regulations](#) concerning halon use and disposal. It is therefore a public responsibility of companies engaged in recovering halons from such equipment to ensure that it is reclaimed in a manner which minimizes halon emissions to the atmosphere. The handling of halon under pressure by untrained employees may also constitute a serious safety hazard to individuals in the immediate vicinity.

Although halon production was phased out in the United States in 1994 and worldwide in 2010, halons are still needed for applications that are critical to society such as aviation, oil and gas production, and military. Minimizing halon emissions and limiting contamination during recovery and recycling can help to extend the future supply of halons for these critical uses.

### RECOMMENDED PRACTICES

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

#### Operations

- A. Operate in accordance with requirements of NFPA 12A or NFPA 10, as required by [EPA regulations](#).
- B. Test incoming used halon prior to processing to detect cross contamination with other agents. Advise the supplier of the extent of any contamination.
- C. Recover or recycle halons during servicing or decommissioning of an extinguishing unit using suitable recovery or recycling equipment.
- D. Thoroughly evacuate and/or purge with dry nitrogen all equipment used to recover, store and transfer halons prior to each use to prevent contamination of agent with other agents, water, and foreign substances.
- E. Prior to sale or reuse in fire extinguishing systems, recovered halons shall be tested and certified to meet ASTM or other international standards.  
*Note: AHRI 700-certified laboratories are among the laboratories that may be capable of testing to these standards.*
- F. If recovered halon is found to contain contaminants that make it technically or economically unfeasible to bring into compliance with quality specifications, arrange for destruction of the halon 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](#).

#### Safety

- H. Ensure that all technicians who operate or supervise the use of halon recovery or recycling equipment receive appropriate training as required by [EPA regulations](#) and outlined in the [EPA Guidance for the Halon Emission Reduction Rule](#). Training can come from the manufacturer of the equipment or through an equivalent training program.

# Code of Practice for Use of Recycled Halogenated Clean Agents

- I. Provide Hazardous Materials Training (HAZMAT) for technicians and other employees involved in handling and shipment of halons as required by United States Department of Transportation (DOT) regulations 49 CFR.
- J. Follow ASTM standards for the handling, transportation and storage of halons.
- K. Follow all applicable regulations, such as United States Department of Transportation (DOT) and Transport Canada, for the storage, packaging and shipment of halons.
- L. Provide safe handling instructions, including safety data sheets (SDS), to all suppliers of used halon and accept halon only when packaged for shipment and transported according to ASTM standards from both domestic and international suppliers. If shipping exclusively outside of the United States or its territories, international and/or local shipping regulations must be followed.
- M. Provide independent laboratory analysis and certification that each shipment of recycled halon meets or exceeds ASTM or other international standards.

## Equipment

- N. Use recovery or recycling equipment that can reclaim halons to the appropriate ASTM standard and in accordance with the equipment manufacturer's instructions.
- O. 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.
- P. Repair leaks in agent storage, recovery, recycling, or charging equipment before use.

## Record Keeping

Retain records of the recovery, recycling, and reclamation of halons 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 halon.
2. Maintenance records for recovery and recycling equipment.
3. Documentation of training for personnel performing or supervising halon recovery or recycling.

*Note: Retention time for employee HAZMAT training records is governed by [PHMSA DOT regulations 49 CFR](#).*

## DEFINITIONS

**Halons:** Halons include the brominated halocarbons used as fire extinguishing clean agents listed below:

Halon 1301 (bromotrifluoromethane, CF<sub>3</sub>Br): Used in total flooding fire protection systems.

Halon 1211 (bromochlorodifluoromethane, CF<sub>2</sub>BrCl): Used as a streaming agent in hand-held and wheeled fire extinguishers.

**Recovered Halon:** Halon 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 Halon:** Halon that has been recovered, tested, and processed as necessary to bring it into compliance with the quality requirements of ASTM or other international standards.

**Relevant Standards** (*refer to most recent revision available*):

**NFPA 12A:** National Fire Protection Association Standard for Halon 1301 Fire Extinguishing Systems, current edition

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

**ASTM D5632/D5632M:** Standard Specification for Halon 1301

**ASTM D5631:** Standard Practice for Handling, Transportation and Storage of Halon 1301

**ASTM D7673/D7673M:** Standard Specification for Halon 1211

**ASTM D7815:** Standard Practice for Handling, Transportation and Storage of Halon 1211