

SOUTH PORTLAND FIRE DEPARTMENT

STANDARD OPERATING GUIDELINES

SOG #:	6.621	Effective Date:	1/30/2020
Title:	Response to Freon Leaks	# of pages:	2
Category:	Hazardous Materials Response	Classification:	Red

1. **PURPOSE:** To describe the risks and dangers of Freon leaks and outline response guidelines.

2. **PROCEDURES:**

Background: Freon is a chemical substance with multiple applications in industrial production, and it has widespread use. Freon is a trade name covering a number of chemicals which are known as chlorofluorocarbons, indicating that they include carbon, hydrogen, chlorine and fluorine. The most important members of the Freon group are Freon 11, Freon 12, and Freon 22. In general, Freon comes in the form of non-flammable and colorless liquids and gases, mainly used in refrigeration and the production of lubricants and fluorocarbon resins, and as a solvent in aerosol propellants. Despite its numerous applications, in certain conditions, Freon might pose some risks to human health.

In most cases, Freon exposure is in small quantities, for example, in case of leaks from the refrigerator or the air conditioner. When trying to figure out how much Freon someone has been exposed to, there are several things to keep in mind. First, there is a finite amount of Freon contained in the refrigeration system, so the exposure cannot be any more than what is actually in the system. Second, Freon is about **4 times heavier** than air, so it is going to sink to the floor initially, though it is highly volatile and will disperse rapidly. What this means is that the closer to the floor that you are, the more Freon you are likely to breathe in. This is a concern especially for children because they are shorter (closer to product) and smaller, thus requiring smaller doses for acute effects to occur.

Exposure to Freon can cause nausea, weakness, headache, dizziness and confusion. The most serious side effect of Freon exposure would occur at the time of initial exposure. People who have a history of heart problems should be concerned about Freon because it can cause an irregular heartbeat, and palpitations at very high concentrations. For people who have a history of heart problems, being exposed to small amounts of Freon from leaking appliances should not pose any significant health. Freon has no long term effects on health. Freon is not a mutagen, teratogen or carcinogen, and it does not affect the liver.

Response to a suspected Freon leak would be the same as other gas leaks.

- Full PPE along with SCBA.
- Size up and incident command will be established.
- Gathering information from the representative or caller.
- Ensure building has been evacuated.
- An initial entry team will be assigned to investigate leak using the standard tools (4 gas meters w/PID) to determine that it is in fact a Freon leak and rule out the chance that it is another product leaking (i.e. propane or natural gas).

- The 4 gas meter would only show O₂ displacement and the PID will not see it (IP too high)
- Control if possible source of leak (close valves/plug piping).
- Request additional resources as needed.
- Initiate ventilating the building.
- Industrial site: Have the site representative request their refrigeration contractor respond.
- Private residents (refrigerator, freezer, AC unit): Assist in removing leaking unit outside building.
- Notify DEP.

3. REFERENCES:

- <http://www.doityourself.com/stry/3-health-effects-of-freon-exposure>
- [http://wiki.answers.com/Q/Are Freon Gases completely harmless to human body](http://wiki.answers.com/Q/Are_Freon_Gases_completely_harmless_to_human_body)

By Order Of:



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