

1.3 CF₃I Spill Procedure*Written Procedure*1.3 CF₃I Spill Procedure

CF₃I is a fire extinguishing agent and a halon substitute. CF₃I gas may be hazardous if inhaled. At concentrations above 0.2% in air, it has been shown to produce cardiac problems in dogs. When liquid or in high gas concentrations, it may also cause eye and skin irritation, redness, and rashes. The rapid expansion and low boiling point of CF₃I may also pose a frostbite hazard when evaporating.

If you are not wearing a respirator, for all CF₃I spills:

1. **Calmly evacuate** J drift and guard the area. Breath air far from the floor.
2. If more than 10L of gas may have escaped, or if you feel cold air, calmly evacuate and guard the ladder labs.
3. Contact the Laboratory Coordinator and inform them of the spill.
4. Try to determine the size of the spill and the area affected.
5. Await further instruction.

If you are wearing a respirator:

1. Determine the size of the spill.
 - a) If more than 11 mL of liquid or 2.8L of gaseous CF₃I are leaked, the CF₃I may exceed occupational limits. Inform nearby unprotected personnel to stop work, move to a safe location and guard the area.
 - b) If more than 30mL of liquid or 7.5L of gaseous CF₃I are leaked, the concentration of CF₃I vapours may exceed 0.2%. Direct personnel away from the area immediately and guard the area.
2. Do not touch or breath high concentrations of CF₃I due to low oxygen and/or frostbite hazards.
3. If safe, attempt to stop the spill.
4. Inform the Lab Coordinator of the spill and await further instruction.
5. File an IIR for large spills, or an UOR for spills of less than 5 gaseous litres.

Key Values:

CF₃I occupational exposure limits: C 750ppm STEL 450ppm TWA 150ppm

Maximum CF₃I concentration showing no cardiac effects in canines: 0.2%

Volume of gaseous CF₃I in COUPP 2L: 0.51m³

Expansion ratio of CF₃I at STP: 253:1

Volume for which COUPP's CF₃I is at 0.2%: 250m³

Volume for which COUPP's CF₃I is at the occupational exposure limit:

C 670m³ STEL 1100m³ TWA 3350m³

J Drift Volume 1042 m³