



Phasedown of HFCs

Matt Dabrowski, Technical Manager – ALL4
Scott Kirkpatrick, Technical Director – ALL4



Logistics

- ❑ How can I ask questions?
 - Please enter your questions in the Questions box.
 - There will be a Q&A at the end.
- ❑ Will I get a certificate of completion?
 - Yes, all attendees will automatically be sent a certificate of completion a few hours after the webinar concludes.
- ❑ Will I get a copy of the slides?
 - Yes, we will post a recording of the webinar and a copy of the slides on our website. A link will be emailed to all registrants tomorrow.





Agenda

- ❑ Brief History of Part 84
- ❑ Purchasing Restrictions
- ❑ Installation Restrictions
- ❑ Leak Repair Requirements
- ❑ Automatic Leak Detection
- ❑ Fire Suppression Systems





What is 40 CFR Part 84?

- ❑ Prior to 2020 – Part 82 – Ozone Depleting Substances (ODS)
- ❑ 2020 - American Innovation and Manufacturing (AIM) Act
- ❑ 2021 - Subpart A - Production and Consumption Controls
- ❑ 2023 - Subpart B - Restrictions on the Use of Hydrofluorocarbons
 - Amended: December 2024, August 2025
- ❑ 2024 - Subpart C - Management of Regulated Substances





New Purchasing Restrictions

- ❑ When purchasing refrigerants or components:
 - R-22 can only be used to service existing equipment manufactured before January 1, 2010.
 - U.S. production and import of R-22 ended January 1, 2020
 - U.S. production and import of any HCFC ends January 1, 2030
 - Hydrofluorocarbons (HFC), with a global warming potential (GWP) $\geq$ 700 (e.g., R-23, R-134, R-134a, R-410a), will be restricted for use to service existing equipment after the dates specified in the rule or installed in new units prior to the specified dates.
 - U.S. production and import of any HFC to be significantly reduced starting in 2022 through 2036.





Key Terms and Definitions

- ❑ ***Comfort cooling*** is defined as units used for air conditioning to provide cooling to control heat and/or humidity in occupied facilities including but not limited to residential, office, and commercial buildings.
- ❑ ***Industrial process air conditioning*** includes process air-conditioning units which provide comfort cooling for operators and protect process equipment.
- ❑ ***Residential or light commercial air conditioning and heat pump systems*** are defined as equipment for cooling air in individual rooms, single-family homes, and small commercial buildings, excluding chillers.



Key Terms and Definitions

- ❑ **Industrial process refrigeration** refers to units that are directly linked to the processes typically used to cool process streams in industrial applications.
- ❑ **Commercial refrigeration** refers to refrigerant-containing appliances used in the retail food and cold storage warehouse subsectors.
 - Retail food appliances include the refrigerant-containing appliances found in supermarkets, convenience stores, restaurants, and other food service establishments.
 - Cold storage includes the refrigerant-containing appliances used to store meat, produce, dairy products, and other perishable goods.



New Installation Restrictions

Appliance Application	Additional Details	GWP	Effective Date
Chillers used for comfort cooling	-	700	January 1, 2025
Residential or light commercial air conditioning and heat pump systems	-	700	January 1, 2025
Chillers used for industrial process refrigeration	Temperature of the fluid exiting the chiller is greater than -22 °F	700	January 1, 2026
Non-chiller industrial process refrigeration systems, that are not the high-temperature side of a cascade system	Refrigerant capacity of 200 pounds or greater and with the refrigerant temperature entering the evaporator higher than -22 °F	150	January 1, 2026
Non-chiller industrial process refrigeration systems	Refrigerant capacity of less than 200 pounds and with the refrigerant temperature entering the evaporator higher than -22 °F	300	January 1, 2026
Non-chiller industrial process refrigeration systems, that are the high-temperature side of a cascade system	Refrigerant temperature entering the evaporator higher than -22 °F	300	January 1, 2026
Variable refrigerant flow systems	Used for residential or light commercial air conditioning and heat pumps	700	January 1, 2026
Computer room and data server cooling systems	-	700	January 1, 2027
Chillers used for industrial process refrigeration	Temperature of the fluid exiting the chiller is greater than or equal to -58 °F and less than or equal to -22 °F	700	January 1, 2028
Non-chiller industrial refrigeration systems	Temperature of the refrigerant entering the evaporator is greater than or equal to -58 °F and is less than or equal to -22 °F	700	January 1, 2028

New Installation vs Maintenance

❑ Installation:

- Assembling a system for the first time from used or new components.
- Increasing cooling capacity of an existing system.
- Replacing 75% or more of the evaporators and 100% of compressor racks, condensers, and connected evaporator loads on existing systems.

❑ Maintenance:

- Leak rate calculations
- Leak detection and repair
- Verification tests
- Replacing components that will not trigger threshold for a new install





Leak Rate and Repair Requirements

- ❑ 40 CFR Part 82, Subpart F = applicable to units $\geq$ **50 pounds (lbs)** HCFC (i.e., ozone-depleting substance [ODS])
- ❑ 40 CFR Part 84, Subpart C = applicable to units with $\geq$ **15 lbs** HFC and GWP >53
- ❑ For appliances with multiple circuits, each independent circuit is considered a separate appliance.





Leak Rates and Time-Based Repairs

- ❑ Leak Determinations
- ❑ Initial and Follow-up Verification Tests
- ❑ Leak Inspections
- ❑ Retrofit or Retirement Plans

Application	Leak Rate
Industrial Process	30%
Commercial	20%
Comfort Cooling	10%



Recordkeeping

- ❑ By January 1, 2026, determine full charge of all appliances with ≥ 15 lbs of refrigerant.
- ❑ Must maintain the following information for three years after the unit is retired:
 - Identification of owner/operator
 - Address of where unit is located
 - Full charge of appliance and how full charge was determined
 - Date of installation





Reporting

- ❑ Units with ≥ 15 lbs HFC Full Charge
 - Chronically leaking appliance notifications due by March 1 of the following year.
 - Chronic leak = unit leaks more than 125% of the unit capacity in a calendar year.
 - Notification and extension requests to U.S. EPA if repair takes >30 days.
 - Retrofit or retirement plans.



Automatic Leak Detection

- ❑ Industrial process refrigeration or commercial refrigeration with a full charge of $\geq 1,500$ lbs HFC and GWP >53 .
 - Must install and use an automatic leak detection system.
 - For existing units by **January 1, 2027**
 - Annual calibration
 - Detection and accuracy requirements
 - Recordkeeping requirements



Fire Suppression Systems

- ❑ Starting January 1, 2026, fire suppression systems using an HFC will be subject to:
 - Venting prohibitions
 - Technician training requirements
 - Disposal requirements
 - Annual recordkeeping and reporting





Summary

❑ Starting 2026

- Inventory of appliances $\geq$ 15 lbs (Jan. 1st)
- Means to determine and track leak rates and repairs (Jan. 1st)
- Fire Suppression Technician training (Jun. 1st or w/in 30 days of hiring)

❑ Starting 2027

- Automatic leak detection system installed and calibrated (Jan. 1st)
- Annual fire suppression report submitted to U.S. EPA (Feb. 14th)
- Chronic leaking unit notification to U.S. EPA (Mar. 1st)





FAQs

- ❑ What if I contract out all my refrigerant management?
- ❑ What if I use a rental appliance?
- ❑ What if my appliance is used for both industrial process refrigeration and comfort cooling?
- ❑ Any benefit for using an automatic leak detection system for a unit <1,500 pounds



How can ALL4 help?

- ❑ Inventory development,
- ❑ Leak rate tracking and chronic leak reporting,
- ❑ Retrofit and retirement plan development,
- ❑ Project planning and purchasing guidance for future installations and rebuilds,
- ❑ Refrigerant Management Plans,
- ❑ Employee awareness training, and
- ❑ Refrigerant program compliance assessments.



Get ALL4 Updates



Your Part
Environm
Safety Co

ALL4 is a globally-recognized
distinction for employees, cli

CONTACT US →



Lead Copper Rule Improvements Update

Posted: October 30th, 2025

The Lead and Copper Rule Improvements were finalized in October 2024 with Federal requirements as a national baseline including, but not limited to: Lead Service Line Replacement (LSLR) by 2037, Submitting an updated sampling plan to [...]

READ ARTICLE >



Water Regulatory Update: U.S. EPA's Latest Agenda

Posted: October 30th, 2025

The Spring Unified Agenda of Regulatory and Deregulatory Actions was (finally) published in early September at reginfo.gov and it brought some anticipated but abbreviated insights into the water regulatory priorities of the U.S. Environmental Protection Agency (U.S. EPA). Some key [...]

READ ARTICLE >



CTDEEP Industrial Stormwater General Permit Reissuance

Posted: October 23rd, 2025

The Connecticut Department of Energy and Environmental Protection (DEEP) reissued the industrial stormwater general permit (IGP) on October 1, 2025 with an effective date of November 1, 2025. The previous DEEP National Pollutant Discharge Elimination System (NPDES) General Permit for [...]

READ ARTICLE >



Turning Exposure Data Into Safer Workplaces

Posted: October 23rd, 2025

Understanding Workplace Airborne Hazards In many workplaces employees handle chemicals that can cause both immediate and long-term health effects. Whether it be in a research and development laboratory or a manufacturing environment, airborne contaminants can pose risks if not properly [...]

CONTACT US



Sign up for 4 The Record to
stay up to date on technical
and regulatory topics!

www.all4inc.com



Questions or Comments?

Contact Information:

Matt Dabrowski

mdabrowski@all4inc.com // 678.737.1561

www.all4inc.com