



SECTION 608 REGULATORY CHANGES

OVERVIEW: Extends existing regulations for CFCs and HCFCs to HFCs and non-exempt substitutes

TOPIC	Who is Affected	When	Requirement
REFRIGERANT RECLAMATION	*Technicians *Appliance owners/operators	1-1-2017	◆Used HFC, HCFC, and CFC refrigerants must be reclaimed by an EPA certified reclaimer before they can be used in a different owner's system
REFRIGERANT SALES RESTRICTION	*All refrigerant purchasers *All refrigerant sellers	1-1-2018	◆Only certified technicians can purchase HFC refrigerants (already required for HCFC and CFC refrigerants); does not apply to EPA exempted substitutes
TECHNICIAN CERTIFICATION	*Persons who service, maintain repair or dispose of appliances (technicians)	1-1-2018	◆Technicians must be certified to open HFC appliances (already applicable to HCFC and CFC appliances); a technician must be certified to perform required leak inspections (a leak inspection is required if the system is known to be leaking above the allowable annual leak rate)
SERVICE PRACTICES	*Technicians *Appliance owners/operators	1-1-2018 1-1-2019	◆HFC appliances must be evacuated to same evacuation levels that apply to HCFC and CFC before being opened for servicing ◆Lower allowable leak rates apply to all refrigerant appliances containing 50 or more lbs. ◆Leak inspection required for all refrigerant application that exceed the allowable leak rate (it is up to the technician to determine the appropriate method to detect leaks) ◆Leak repair verification test required for all refrigerant appliances that exceed the allowable leak rate ◆Must provide equipment owners with invoices that include the amount of refrigerant added ◆Must provide equipment owners with the results of leak inspection and verification tests
	*Appliance owners/operators	1-1-2019	◆Must calculate leak rate each time refrigerant is added to an appliance containing 50 lbs. or more of refrigerant ◆Must comply with lower allowable leak rates ◆Must repair leaks in an affected appliance until the appliance is below the allowable leak rate ◆Must have the leak(s) repaired within 30 days of determining that the leak rate exceeds the allowable rate ◆Must notify EPA if more than 30 days are needed to complete a repair (e.g. replacement component will not be available within 30 days) ◆Must develop a retrofit or replacement plan if allowable leak rate cannot be achieved within allotted time ◆Must perform initial and follow up verification after a leak(s) has been repaired to confirm the repair(s) worked ◆Must retain records on amount of refrigerant added to an appliance ◆Must retain records of results of leak inspection and verification tests ◆Must submit report to EPA no later than March 1 if an appliance leaks 125% or more of its full charge in one calendar year (chronically leaking appliance) ◆Must include in report to EPA efforts to identify and repair chronically leaking appliance
APPLIANCE DISPOSAL	*Technicians	1-1-2018	◆HFC appliances destined for disposal must be properly evacuated prior to disposal ◆Records must be maintained for disposed appliances that contained between 5 and 50 lbs. of refrigerant (this already applies to appliances that contained 50 lbs. or more)



SECTION 608 REGULATORY CHANGES

RECORDKEEPING---All records must be maintained for 3 years

Record Type	What Must be Included	Who Must Retain the Records	Record Source
APPLIANCE INFORMATION	<ul style="list-style-type: none"> ◆Documentation of each appliance's full charge ◆Amount of refrigerant added to or removed from an appliance each time ◆Calculation of leak rate ◆When a leak inspection is performed ◆When verification is conducted ◆When service or maintenance is performed ◆Automatic leak detection system information if applicable 	Owner/Operator Owner/Operator Owner/Operator Owner/Operator Owner/Operator Owner/Operator Owner/Operator	Owner/Operator Technician Owner/Operator Technician Technician Technician Technician
APPLIANCE DISPOSAL	<ul style="list-style-type: none"> ◆Name of company disposing of appliance ◆Location of appliance ◆Date of recovery and type of refrigerant recovered from appliance ◆Total quantity of refrigerant by type recovered from all disposed appliances/month ◆Quantity and type of recovered refrigerant sent for reclamation or destruction ◆Name of company recovered refrigerant was transferred to and date of transfer 	Technician Technician Technician Technician Technician Technician	Technician Technician Technician Technician Technician Technician
LEAK INSPECTION (if applicable)	<ul style="list-style-type: none"> ◆Date of leak inspection ◆Method(s) used to detect leaks ◆Calculation of leak rate ◆Location of each leak identified during inspection ◆Certification statement indicating that all visible and accessible parts were inspected 	Owner/Operator Owner/Operator Owner/Operator Owner/Operator Owner/Operator	Technician Technician Owner/Operator Technician Technician
VERIFICATION TEST (if applicable)	<ul style="list-style-type: none"> ◆Location of appliance ◆Date of verification test ◆Location of each repaired leak that was tested ◆Type of verification test used ◆Result of each verification test 	Owner/Operator Owner/Operator Owner/Operator Owner/Operator Owner/Operator	Technician Technician Technician Technician Technician

TECHNICANS ARE REQUIRED TO PROVIDE THE FOLLOWING INFORMATION TO APPLIANCE OWNERS/OPERATORS:

For any Maintenance, Service Repair, or Disposal of an Appliance:

- ◆Identity and location of appliance
- ◆Date and type of maintenance, etc., performed including: location of repair, leak inspections or verification tests, if applicable
- ◆Name and contact information of person performing maintenance, etc.
- ◆Amount of refrigerant added to or removed from an appliance



SECTION 608 REGULATORY CHANGES

ALLOWABLE LEAK RATES – Only applies to appliances containing 50 lbs. or more of a refrigerant

Appliance Type	Current Leak Rate	New Leak Rate Effective 1/1/2019
Industrial Process Refrigeration	35%	30%
Commercial Refrigeration	35%	20%
Comfort Cooling	15%	10%

- LEAK DETECTION**
- ◆ EPA does not require a specific method for detecting leaks
 - ◆ Leak inspection must be conducted on all visible and accessible components of an appliance
 - ◆ What is not considered visible or accessible:
 - Insulated components
 - Components iced over
 - Components that are underground, behind walls or otherwise inaccessible
 - Components that are located in a position that requires the technician to be elevated more than 6.5 feet
 - Components that are located on the equipment where it would be unsafe for the technician to inspect

EXCEPTION ◆ An equipment owner can choose to install an Automatic Leak Detection system that continuously monitors a whole appliance or portions of the appliance in lieu of performing required periodic inspections

- LEAK REPAIR**
- ◆ Required to repair leak(s) when allowable leak rate is exceeded
 - ◆ Must demonstrate that the repair resulted in the appliance no longer exceeding the allowable leak rate
 - ◆ Must perform initial verification test that leak is repaired before adding refrigerant back into the repaired appliance
 - ◆ Must conduct follow-up verification test after the repaired appliance returns to normal operating performance and condition
 - ◆ Must perform periodic leak inspections of visible and accessible components and parts:

Appliance	Full Charge Size	Frequency of Leak Inspections
Commercial Refrigeration & Industrial Process Refrigeration	≥ 500 lbs.	1x/3mos. until leak rate has not exceeded threshold for four consecutive quarters
	50 to <500 lbs.	1x/calendar year until leak rate has not exceeded threshold for one year
Comfort Cooling	≥ 50 lbs.	1x/calendar year until leak rate has not exceeded threshold for one year

- ◆ Leak Repairs and inspections must be documented with the following information:
 - date of leak inspection
 - method(s) used to detect leaks
 - location of each leak identified during inspection
 - certification statement indicating that all visible and accessible parts were inspected

• LEAK RATE CALCULATION

Annualizing method

EPA defines the annualizing leak rate calculation method as follows:

$$\text{Leak Rate (\% per year)} = \frac{\text{pounds of refrigerant added}}{\text{pounds of refrigerant in full charge}} \times \frac{365 \text{ days/year}}{\text{shorter of \#days since refrigerant last added or 365 days}} \times 100\%$$

OR

Rolling Average method

EPA defines the annualizing leak rate calculation method as follows:

$$\text{Leak Rate (\% per year)} = \frac{\text{pounds of refrigerant added over past 365 days}^\dagger}{\text{pounds of refrigerant in full charge}} \times 100\%$$