
40 C.F.R. § 82.156

Proper evacuation of refrigerant from appliances.

Until January 1, 2018, this section applies only to evacuation of refrigerant from appliances containing class I or class II refrigerants. Starting on January 1, 2018, this section applies to evacuation of refrigerant from appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant, excluding paragraph (i) of this section which applies only to appliances containing class I or class II refrigerants until January 1, 2019. Starting January 1, 2019, the provisions in § 82.157 apply in lieu of paragraph (i) of this section.

(a) *Appliances (except small appliances, MVACs, and MVAC-like appliances).* Before opening appliances (except small appliances, MVACs, and MVAC-like appliances) or disposing of such appliances, technicians must evacuate the refrigerant, including all the liquid refrigerant, to the levels in Table 1 using a recovery and/or recycling machine certified pursuant to § 82.158 unless the situations in paragraphs (a)(1) or (2) of this section apply. Technicians may evacuate either the entire appliance or the part to be serviced, if the refrigerant in the part can be isolated to a system receiver. A technician must verify that the applicable level of evacuation has been reached in the appliance or the part before it is opened.

(1) If evacuation of the appliance to the atmosphere is not to be performed after completion of the maintenance, service, or repair, and if the maintenance, service, or repair is not major as defined at § 82.152, the appliance must:

(i) Be evacuated to a pressure no higher than 0 psig before it is opened if it is a medium-, high- or very high-pressure appliance;

(ii) Be pressurized to a pressure no higher than 0 psig before it is opened if it is a low-pressure appliance. Persons must cover openings when isolation is not possible. Persons pressurizing low-pressure appliances that use refrigerants with boiling points at or below 85 degrees Fahrenheit at 29.9 inches of mercury (standard atmospheric pressure), must not use methods such as nitrogen that require subsequent purging. Persons pressurizing low-pressure appliances that use refrigerants with boiling points above 85 degrees Fahrenheit at 29.9 inches of mercury, must use heat to raise the internal pressure of the appliance as much as possible, but may use nitrogen to raise the internal pressure of the appliance from the level attainable through use of heat to atmospheric pressure; or

(iii) For the purposes of oil changes, be evacuated or pressurized to a pressure no higher than 5 psig, before it is opened; or drain the oil into a system receiver to be evacuated or pressurized to a pressure no higher than 5 psig.

(2) If leaks in the appliance make evacuation to the levels in Table 1 unattainable or would substantially contaminate the refrigerant being recovered, persons opening or disposing of the appliance must:

(i) Isolate leaking from non-leaking components wherever possible;

(ii) Evacuate non-leaking components to be opened or disposed of to the levels specified in Table 1; and

(iii) Evacuate leaking components to be opened or disposed of to the lowest level that can be attained without substantially contaminating the refrigerant. This level may not exceed 0 psig.

(3) *Recordkeeping.* As of January 1, 2018, technicians evacuating refrigerant from appliances with a full charge of more than 5 and less than 50 pounds of refrigerant for purposes of disposal of that appliance must keep records documenting the following for three years:

- (i) The company name, location of the appliance, date of recovery, and type of refrigerant recovered for each appliance;
- (ii) The total quantity of refrigerant, by type, recovered from all disposed appliances in each calendar month; and
- (iii) The quantity of refrigerant, by type, transferred for reclamation and/or destruction, the person to whom it was transferred, and the date of transfer.

Table 1—Required Levels of Evacuation for Appliances

[Except for small appliances, MVACs, and MVAC-like appliances]

Type of appliance	Inches of Hg vacuum (relative to standard atmospheric pressure of 29.9 inches Hg)	
	Using recovery and/or recycling equipment manufactured or imported before November 15, 1993	Using recovery and/or recycling equipment manufactured or imported on or after November 15, 1993
Very high-pressure appliance	0	0.
High-pressure appliance, or isolated component of such appliance, with a full charge of less than 200 pounds of refrigerant	0	0.
High-pressure appliance, or isolated component of such appliance, with a full charge of 200 pounds or more of refrigerant	4	10.
Medium-pressure appliance, or isolated component of such appliance, with a full charge of less than 200 pounds of refrigerant	4	10.
Medium-pressure appliance, or isolated component of such appliance, with a full charge of 200 pounds or more of refrigerant	4	15.
Low-pressure appliance	25 mm Hg absolute	25 mm Hg absolute.

(b) *Small appliances.* Before opening a small appliance or when disposing of a small appliance, persons must recover refrigerant, using a recovery and/or recycling machine certified pursuant to § 82.158, according to the following conditions:

- (1) When using recovery equipment manufactured before November 15, 1993, recover 80 percent of the refrigerant in the small appliance; or
- (2) When using recovery equipment manufactured on or after November 15, 1993, recover 90 percent of the refrigerant in the appliance when the compressor in the appliance is functioning, or 80 percent of the

refrigerant in the appliance when the compressor in the appliance is not functioning; or

(3) Evacuate the appliance to four inches of mercury vacuum.

(c) *MVAC-like appliances.* Persons may only open MVAC-like appliances while properly using, as defined at § 82.32(e), recovery and/or recycling equipment certified pursuant to § 82.158(f) or § 82.36, as applicable. All persons recovering refrigerant from MVAC-like appliances for purposes of disposal of these appliances must evacuate the appliance in accordance with 40 CFR part 82, subpart B or reduce the system pressure to or below 102 mm of mercury vacuum.

(d) *MVACs.* All persons recovering refrigerant from MVACs for purposes of disposal of these appliances must evacuate the appliance in accordance with 40 CFR part 82, subpart B or reduce the system pressure to or below 102 mm of mercury vacuum.

(e) System-dependent equipment may not be used with appliances with a full charge of more than 15 pounds of refrigerant, unless the system-dependent equipment is permanently attached to the appliance as a pump-out unit.

(f) Persons who maintain, service, repair, or dispose of only appliances that they own and that contain pump-out units are exempt from the requirement to use certified, self-contained recovery and/or recycling equipment.

(g) All recovery and/or recycling equipment must be used in accordance with the manufacturer's directions unless such directions conflict with the requirements of this subpart.

(h) Refrigerant may be returned to the appliance from which it is recovered or to another appliance owned by the same person without being recycled or reclaimed, unless the appliance is an MVAC or MVAC-like appliance.

(i) The provisions in this paragraph (i) apply to owners and operators of appliances containing 50 or more pounds of class I and class II refrigerants only until January 1, 2019. The definitions in paragraph (j) of this section apply for purposes of this paragraph (i) in lieu of the definitions in § 82.152.

(1) Owners or operators of commercial refrigeration equipment normally containing more than 50 pounds of refrigerant must have leaks repaired in accordance with paragraph (i)(9) of this section, if the appliance is leaking at a rate such that the loss of refrigerant will exceed 35 percent of the total charge during a 12-month period, except as described in paragraphs (i)(6), (i)(8), and (i)(10) of this section and paragraphs (i)(1)(i), (i)(1)(ii), and (i)(1)(iii) of this section. Repairs must bring the annual leak rate to below 35 percent.

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