

September, 2017

GUIDANCE FOR SAFE HANDLING OF REFRIGERANT CONTAINING APPLIANCES/VEHICLES 2017 HURRICANE SEASON

EPA is providing guidance on the handling and disposal of refrigerants in appliances, motor vehicle air conditioners (MVACs), and other equipment containing refrigerants damaged during the 2017 hurricane season. Federal environmental laws govern the handling and disposal of equipment containing refrigerants. For example, persons disposing of MVACs, small appliances, residential or light commercial air conditioners, refrigerated trailers, or other equipment containing refrigerants, are prohibited from knowingly releasing refrigerants during the process of disposing of a vehicle, refrigerated trailer, small appliance, or other refrigerant-containing equipment, including during the preparations for disposal. The following guidelines are provided to help minimize the health, safety, and environmental risks associated with handling and disposing of refrigerated appliances and equipment under the extraordinary circumstances created by the 2017 hurricane season.

Chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) are ozone-depleting substances that are commonly used as refrigerants. Newer motor vehicles and small appliances use substitute refrigerants, such as hydrofluorocarbons (HFCs), which do not deplete the ozone layer, but have other environmental impacts. Federal requirements apply to the handling and disposal of equipment containing CFCs, HCFCs, and substitute refrigerants such as HFCs. These requirements are intended to reduce emissions of ozone-depleting and other harmful substances during the disposal of MVACs and appliances containing refrigerant. It is also reasonable that adequate measures be taken during emergency situations to minimize release of and exposure to such materials during equipment handling and disposal.

Certified Equipment and Technicians

If you are recovering refrigerant for purposes of vehicle or appliance disposal, use EPA certified refrigerant recovery and/or recycling equipment. EPA certified refrigerant recovery and/or recycling equipment will have a label from the Environmental Testing Laboratories (ETL), the Air Conditioning, Heating, and Refrigeration Institute (AHRI) or the Underwriters Laboratories (UL) stating which types of refrigerants the unit is capable of recovering.

Persons maintaining, servicing, or repairing equipment containing ozone-depleting refrigerants are required to have a certification from an EPA approved technician certification program. However, persons recovering refrigerant from small appliances (such as White Goods) or MVACs are not required to be EPA certified if the refrigerant is being removed for the purpose of disposal of the vehicle or small appliance and the refrigerant will be sent for disposal or to an EPA approved reclaimer.

Motor Vehicle Air Conditioners

An MVAC is the refrigeration equipment used to cool the driver/passenger compartment of any motor vehicle, including passenger cars, light duty vehicles, and heavy duty vehicles. MVACs do not include the refrigeration systems used on motor vehicles for refrigerated cargo or the air conditioning systems on passenger buses using HCFC-22 (also known as R-22 or FREON®-22). Vehicles manufactured prior to 1995 generally used CFC-12 (also known as R-12 or FREON®-12), an ozone depleting refrigerant. Vehicles manufactured after 1995 use a non-ozone depleting substitute refrigerant HFC-134a (also known as R-134a). Newer vehicles may use HFO-1234-yf (also known as R-1234yf). The type and amount of refrigerant used in an MVAC will normally be noted on one of the a/c components under the hood of the vehicle. However, vehicles manufactured prior to 1995 may have been retrofitted to HFC-134a or in some cases blend refrigerants containing flammable hydrocarbons, and may not have been properly re-labeled.

White Goods/Small Appliances

Refrigerant containing white goods include refrigerators, freezers, window air conditioners, vending machines, and dehumidifiers. They generally contain 8-12 ounces of ozone-depleting CFCs or HCFCs, or non-ozone depleting HFCs. Some small appliances may contain flammable hydrocarbon refrigerants, which is indicated by a warning label on the unit and red refrigerant tubing. The type and amount of refrigerant used in the white good is noted on the nameplate found in either the freezer or on the refrigerated component of the appliance.

Recovery of Refrigerants from MVACs and White Goods/Small Appliances

- Determine the type of refrigerant and the amount of refrigerant charge from the nameplate on the small appliance or MVAC. To prevent mixing different types of refrigerants, use hand held refrigerant identifiers, if available.
- Using certified recovery equipment, evacuate the refrigerant from the small appliance or MVAC to 0 psig. Recover the refrigerant into a container used only for that type of refrigerant. If you are unable to identify the type of refrigerant in a vehicle or small appliance, recover the refrigerant into a mixed or “junk” refrigerant container.
- A small number of white goods may contain a hydrocarbon refrigerant. That refrigerant may be vented in a well-ventilated area if it can be determined that the appliance came from a residence and not a commercial facility.
- Store refrigerant recovered from a MVAC or small appliance by refrigerant type (i.e., R-22, R-134a, R-1234yf, etc.) in separate approved DOT refrigerant recovery cylinders (identifiable by a yellow band around the top collar of the

recovery cylinder). Use a “junk” or mixed refrigerant container if the refrigerant type is unknown or believed to be contaminated.

- If you recover refrigerant from a small appliance or MVAC for purposes of disposal of the appliance or vehicle, provide a signed statement to the scrap recyclers or landfill operators that all refrigerant that has not previously leaked from the appliance was properly recovered using a certified refrigerant recovery device. Include the name and address of the person recovering the refrigerant and the date it was recovered.
- Deliver the recovered refrigerant to an EPA certified reclaimer who will reprocess it for resale. A list of EPA approved reclaimers is available on EPA’s website at the following address: <https://www.epa.gov/section608/epa-certified-refrigerant-reclaimers>
- Alternatively, refrigerant recovered from an MVAC may be recycled by a certified MVAC technician using approved recycling equipment if it is to be sold for reuse in an MVAC.

Refrigerated Trailers

Refrigerated trailers include any transportable trailer or container placed upon a trailer that is equipped with a refrigeration system designed to refrigerate the cargo. Units manufactured before 1995 generally use an average of 15 pounds of the ozone-depleting CFC refrigerant R-22. Units manufactured after that date may use an array of non-ozone depleting HFC substitute refrigerants such as R-134a, R-404A, and R-507. The type and amount of refrigerant used is typically noted on a nameplate on the equipment. Refrigerant from such trailers may only be recovered by a Section 608 certified technician.

Residential/Light Commercial Air-Conditioning Equipment

Residential and light commercial air conditioning equipment includes packaged terminal air conditioners, central air conditioners, light commercial air conditioners, and heat pumps. This type of equipment typically contains 5 to 9 pounds of HCFC-22. Units manufactured after 2000 may contain HFC refrigerant R-410A, a high-pressure non-ozone depleting substitute refrigerant. The type and amount of refrigerant used is typically noted on a nameplate located on the outside condensing unit. Care should be taken when recovering refrigerant from these systems as the pressures are typically higher than small appliances or MVACs, especially for systems using R-410A. Refrigerant from such equipment may only be recovered by a Section 608 certified technician.

Recovery of Refrigerants from Refrigerated Trailers and Residential/Light Commercial Air-Conditioners

- For removing refrigerant from a refrigerated trailer or residential/light commercial air conditioner for the purposes of disposal, use a Type II or Universal technician certified by an EPA approved technician certification program.
- Determine the type of refrigerant and the amount of refrigerant charge from the nameplate on the refrigerated trailer or residential/light commercial air conditioner. To prevent mixing different types of refrigerants, use hand held refrigerant identifiers, if available.
- Using certified recovery equipment, evacuate the refrigerant from the refrigerated trailer or residential/commercial air conditioner to 0 psig. Recover the refrigerant into a container used only for that type of refrigerant. If you are unable to identify the type of refrigerant in the equipment, recover the refrigerant into a mixed or “junk” refrigerant container.
- Store refrigerant recovered from a refrigerated trailer or residential/light commercial air conditioner by refrigerant type (i.e., R-22, R-134a, etc.) in separate approved DOT refrigerant recovery cylinders (identifiable by a yellow band around the top collar of the recovery cylinder). Use a “junk” or mixed refrigerant container if the refrigerant type cannot be identified or is believed to be contaminated.
- Deliver the recovered refrigerant to an EPA certified reclaimer who will reprocess it for resale. A list of EPA certified reclaimers is available on EPA’s website at the following address: <https://www.epa.gov/section608/epa-certified-refrigerant-reclaimers>.
- Starting January 1, 2018, companies employing technicians must keep records of the location, date, and type of refrigerant recovered from residential and light commercial air conditioning equipment, as well as the total quantity recovered in a calendar month and the quantity sent for reclamation.

More Information:

- <https://www.epa.gov/mvac>
- <https://www.epa.gov/section608/stationary-refrigeration-safe-disposal-requirements>
- <https://www.epa.gov/section608/frequently-asked-questions-about-safe-disposal-refrigerated-household-appliances>