



Air Conditioning Service Regulations

It's been several years since the first Subaru HFC-134a-equipped air conditioning system entered production. And it's been more than five years since the legal production of CFC-12 officially ended in the United States. Although all new Subaru vehicles sold in this country have been equipped with HFC-134a A/C systems for some time now, many older vehicles with CFC-12 A/C systems are still in service. Some of these older CFC-12 vehicles have been retrofitted to HFC-134a refrigerant, while others may have been charged with 'alternative' refrigerants.

The refrigerant changeover has led to incorrect assumptions among some technicians. Since we're no longer operating in a one refrigerant world, this is understandable. Perhaps you are unsure what the rules regarding refrigerant handling and air conditioning service are.

In recent years, the EPA has carried out enforcement of the Clean Air Act rules which apply to air conditioning systems and refrigerant handling. That's why we felt it would be helpful to print a portion of the EPA Clean Air Act rules which apply to automobile air conditioning systems here. To avoid misunderstandings, specific interpretations of the Clean Air Act rules are taken from EPA statements.

Black Market CFCs

If you knowingly buy or possess illegal chlorofluorocarbons (CFCs) smuggled into the United States, you are committing a punishable, criminal offense. If you are a wholesaler, distributor, or retailer of CFCs, you are responsible for ensuring the CFCs you buy are legal. You should be able to describe the diligent efforts you take to make sure the CFCs you possess were not smuggled into the United States.

What Are the Penalties for Purchasing or Possessing Illegal CFCs?

The most immediate consequence of possessing illegal CFCs is having them confiscated. The U.S. Customs Service, under its laws and regulations, may confiscate any goods that enter the United States illegally. The U.S. Customs Service can

confiscate illegally imported CFCs all the way down the distribution chain. Purchasing your CFCs from a reputable wholesaler or distributor does not relieve you of responsibility. If the CFCs you possess were illegally smuggled into the United States, you could lose the valuable product, even though you paid for it.

There are many other potential consequences of purchasing or possessing illegal CFCs. If the U.S. Customs Service confiscates your CFCs, you might become the subject of an investigation by the Customs Service and the U.S. Environmental Protection Agency (EPA). Investigations of your company might involve interviewing your employees and reviewing your records. The Internal Revenue Service (IRS) also might decide to audit you or your company regarding payment of the excise taxes on CFCs. If you knowingly purchase or possess CFCs illegally smuggled into the United States, you could face severe penalties.

CFC Enforcement Actions

An EPA administrative law judge has ordered a Granite Falls, North Carolina automobile dealer to pay a penalty of \$34,254 for violations of the Clean Air Act. An EPA Administrative Penalty Order has alleged that the dealership failed to use certified technicians as well as the proper recycling or recovery equipment while handling CFC-containing refrigerants. EPA acted on a tip from a former employee, and conducted an investigation of the company's ozone-depleting refrigerant handling practices at its body shop and service facility.

The EPA also filed Administrative Complaints against several companies in the Southeast as part of a nationwide enforcement initiative under the Federal Clean Air Act as it pertains to the use of chlorofluorocarbons (CFCs). The complaints sought a total of more than \$100,000 in civil penalties for alleged violations ranging from the failure to use certified technicians while

servicing refrigerated appliances and auto and residential air conditioners to the use of unacceptable substitute refrigerants.

Handling Contaminated & Unfamiliar Automotive Refrigerants

Buying and handling A/C refrigerants is a lot more complicated than it used to be. Even when R-12 was the only refrigerant in town, many A/C techs discovered systems that had been contaminated with air, R-22 or hydrocarbons such as propane and butane. Today, with new vehicles using R-134a refrigerant, and with an abundance of other R-12 substitutes on the market, the variety of refrigerants that techs may handle on the job is making A/C service more complicated than ever.

Identifying Refrigerants

EPA requires that when any vehicle is retrofitted from R-12, a label identifying the new refrigerant in the system must be placed under the hood, and new fittings that are unique to that refrigerant must be attached to the high- and low-side service ports of the A/C system. These EPA requirements obviously don't solve the entire refrigerant identification problem. Your shop could encounter a vehicle that has been retrofitted to another refrigerant but has not been properly re-labeled, or a vehicle that has the right label, but highly contaminated refrigerant.

Checking refrigerant pressures does not guarantee that you will recognize that refrigerant is contaminated or is a brand that is unfamiliar to you. Unusual head pressures may tip you off that a system labeled to indicate that it has pure R-12 or R-134a in it actually is highly contaminated or contains another refrigerant altogether. However, you may also encounter a contaminated system, or a system that contains a blend refrigerant, that indicates pressures similar to those of pure R-12 or R-134a.

Purchasing a refrigerant identifier unit can help pinpoint many refrigerant identification problems, and EPA strongly recommends (but does not require) that techs obtain this equipment. The equipment you choose will depend on what you plan to do once you discover that refrigerant in a vehicle is not pure R-12 or R-134a. If, for example, you decide to turn the customer with a contaminated system away, then a less-expensive identifier that simply tells you whether refrigerant is pure R-12 or R-134a ("go/no-go") may be sufficient for you.

However, a unit that can help you identify the chemical composition of the refrigerant more specifically can be an important diagnostic tool, so the extra cost may be well worth it. Some models can identify flammable substances, which require special care and safe handling. Some models can tell you how much air is in recycled refrigerant, so that you can use these models to determine whether the air purge cycle feature on your R-12 or R-134a recycling equipment is functioning properly. Excess air in an A/C system can lead to false readings in electronic low charge indicators in some vehicles; rapid clutch cycling and potential clutch failures; and noisy compressor operation. Finally, using this tool may build your customers' confidence in your diagnostic abilities.

Keep in mind that even the most sophisticated diagnostic units on the market today cannot properly identify all combinations of chemicals used in blend refrigerants. Diagnostic identifiers being sold today may be able to identify potential R-12 and R-134a contaminants such as air, R-22, and hydrocarbons, but many were not designed to identify R-124 and R-142b (chemicals that are components in many of the new substitute refrigerants), or to recognize particular chemical combinations as specific patented, marketed blend refrigerants. In the future, equipment manufacturers may develop equipment designed

to identify all of the substitute refrigerants that are being marketed today.

Whether you are interested in purchasing a “go/no-go” unit or a diagnostic unit, check that the unit meets the SAE J1771 standard, which is an indication that the unit accurately identifies refrigerants. When claiming to meet this standard, manufacturers of identifier equipment are required to label the unit stating its level of accuracy.

If you are reluctant to invest in another piece of equipment, consider making an arrangement to borrow an identifier from a nearby service facility that has purchased one. That facility may agree to make its identifier available to you for a reasonable fee.

Recovering & Recycling Contaminated Or Unfamiliar Refrigerants

You may not wish to turn away a good customer who comes to the shop with contaminated R-12 or R-134a, or with a substitute refrigerant for which you have no dedicated recovery or recycling equipment. What do you do?

Recovering Refrigerant

As a first step, the contaminated or unfamiliar refrigerant must be recovered. EPA prohibits venting any automotive refrigerants (including “unacceptable” refrigerants), no matter what combination of chemicals is in the refrigerant. The best way to recover contaminated or unfamiliar refrigerant is to dedicate a recover-only unit to anything that is not pure R-12 or pure R-134a. Some equipment manufacturers may also market new types of recover-only stations specifically designed to remove these refrigerants.

If the refrigerant you extract into a recovery unit contains a high level of flammable substances such as propane and butane, a fire hazard may result if the refrigerant comes into contact with an ignition source within the equipment. Whether you are purchasing a new piece of equipment to handle your contaminated and unfamiliar refrigerants, or you are converting a piece of existing equipment for this purpose, make sure you talk to your sales representative about what features have been incorporated into the equipment to guard against risks of ignition.

Refrigerant should be recovered into the standard DOT-certified, gray-with-yellow-top recovery tank, and if the tank is not equipped with a float valve (which serves as overfill protection), make sure it never gets filled beyond 60 percent of its gross weighted capacity, as specified in the SAE J1989 and J2211 standards.

If A/C service is not a large percentage of your business, then you may be reluctant to invest in another piece of recovery equipment. If this is the case, consider calling a local A/C specialty shop that may have the equipment necessary to service contaminated refrigerants or refrigerants that are unknown to you.

Recycling Refrigerant

Once recovered, refrigerant should not be recycled on-site unless it is uncontaminated R-12 or R-134a. Recovering contaminated R-12 or R-134a refrigerant into recycling equipment may damage the equipment. In addition, EPA regulations currently prohibit technicians from recycling blend substitute refrigerants (contaminated or not). EPA is working with independent testing laboratories and with equipment manufacturers to determine whether it is possible to develop recycling equipment to service these blends that protects both the health and safety of the technician, and the integrity of the A/C system.

Section 609 Technician Certification Programs

Section 609 covers technician certification in the motor vehicle sector only. Becoming certified allows you to: (1) purchase R-12 and ozone-depleting blend substitutes for R-12 (right now, all blends are ozone-depleting); and (2) perform refrigerant servicing of vehicles with R-12, R-134a, or blend refrigerants.

Although you have to be certified to perform refrigerant servicing of vehicles equipped with R-134a, currently, you do not have to be certified to purchase R-134a. EPA, however, issued on June 11, 1998 a proposed regulation that would restrict the sale of R-134a to certified technicians. If you become certified now, your certification will allow you to purchase R-134a if a sales restriction is instituted in the future.

