

Farmers must be certified to buy R-12 refrigerant

Farmers who service air-conditioning systems on their own agricultural equipment must be certified technicians in order to buy refrigerants.

Farmers working on their own agricultural equipment can become certified under Section 609 of the Clean Air Act.

Section 609 certification is a home-study, open-book test that costs about \$25. Technically, 609 covers motor vehicles, not off-road vehicles. But for farmers who need to buy refrigerant to “top off” their systems, the 609 certification is probably the best option.

Only farmers who pass Section 609 can buy refrigerant. They will have to show their 609 certification card to do so. Suppliers of large containers (20 pounds) of refrigerants will return invoices with the names of purchasers.

Farmers can continue to use existing refrigerant and reclaimed or recycled refrigerant, but EPA regulations prohibit them from intentionally venting refrigerants into the air.

Farmers “topping off” their own equipment are not required to purchase additional equipment. But they will need technician certification to be able to continue buying refrigerant.

Recycling equipment both recovers the refrigerant from the motor vehicle and processes it through an oil separator, a filter and a dryer. Recover-only equipment removes refrigerant from an AC unit and transfers it to a holding tank. Farmers working on only their own equipment and evacuating air conditioners do not have to clean the refrigerant, but just save it.

Farmers can use refrigerant recovered from or recycled to any other system they own.

Farmers can use homemade recovery or recycling equipment as long as they are working on only their own equipment. Though homemade, this equipment must meet the requirement to evacuate to 4 inches of mercury for R-12 refrigerant.

Violations of the law can incur fines up to \$25,000 a day for each violation.

For more information, contact: the Small Business Environmental Assistance Program’s technical assistance at Kansas State University at 785-532-6501 or 800-578-8898 or the EPA Ozone Hotline at 800-296-1996.

The issue of refrigerants raises lots of questions. Below are some of the more common questions and answers to them.

Why are the refrigerants so expensive?

The last time you had to service your refrigeration system, refrigerant costs had risen to over \$13 a pound. Only 10 years ago, that same refrigerant cost less than \$1 a pound. The driver for this cost increase centers around the phase-out of production of chlorofluorocarbon (CFC) refrigerants in the United States as of Jan. 1, 1996. Since that time, these refrigerants have become more expensive and harder to get. This trend will continue since the only source of replacement refrigerants is from recycling and reclaiming of existing supplies.

What about alternative refrigerants besides 134-A? Some alternatives are advertised as “drop-in” replacements.

Because of the vast numbers of existing refrigerating systems, a great demand for suitable alternatives exists. In response to this demand, refrigerant manufacturers have developed and marketed replacements. However, there are no “drop-in” replacements. All refrigerant replacements will require some modification to the system and will affect system performance.

Material compatibility between the existing refrigerating system and the new refrigerant is a major issue. Some alternative refrigerants are very aggressive solvents. Seals, plastic and rubber components, electric motor insulation and varnishes and other organic components of the system may require replacement when making the switch.

Lubrication is a second critical issue. Most CFC refrigerant systems used mineral oil as the lubricant. Some alternative



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refrigerants are not compatible with mineral oil, others can tolerate blends of mineral oil and alternative oils, and some operate fine with mineral oil alone. As a result, the procedures used to remove and replace system oil are determined by the alternative refrigerant chosen and the manufacturer of the system components.

Many commercially available alternative refrigerants are actually blends of hydrofluorocarbons (HFC) or hydrochlorofluorocarbons (HCFC). The blending proportions have been chosen so the blend behaves thermodynamically similarly to the original refrigerant. However, many blends retain some of the characteristics of the individual components.

One undesirable characteristic of the blends is they may tend to fractionate when there is a leak. That is, one or more components of the blend tend to leak at a faster rate than the others. As the leak progresses, the make-up of the blend changes—and so do the properties. The refrigerant system begins to shift performance because of low refrigerant levels and changing refrigerant properties.

If the total percentage of refrigerant lost to the environment is small, fixing the leak and topping it off will restore the system's performance. However, if a significant portion of the refrigerant leaks out, what remains may need to be removed for off-site recycling and the system recharged with virgin refrigerant. As a result, consider the leak potential when choosing an alternative.

Making decisions about refrigerant replacements is not an easy one. Work with your refrigerant system service staff, the manufacturer of the equipment, and the supplier of the alternative refrigerants to find the best solution for your situation.

Is there an annual fee for the 609 certification?

No. Once you are certified, there is no additional fee.

Must you have special recovery equipment for R-134-A (the common replacement for R-12)?

You must recover R-134-A. Even though R-134-A is not an ozone depleter, it replaces a "Class I" substance and so must be recovered. If you have homemade recovery equipment for R-12, you could modify the equipment to use with R-134-A. You would need a different bottle, and you might have to change some of the hoses and gaskets because R-134-A has different solvent properties than R-12. Talk to your equipment manufacturer for details.

Do you have to be certified to buy R-134-A?

No. Currently there is no restriction on purchase of R-134-A.

Section 609 technician certification programs: EPA approved

The following are just a few of the companies that have received approval from the EPA to offer certification. Call or write these organizations and ask them to send you an application form. Complete the form and send it back with the fee indicated. The certifying company will send you a booklet and a test. After reading the booklet and completing the test, return the test to the company. It will send you your certification card.

C.F.C. Reclamation and Recycling Service Inc.

P.O. Box 560
Abilene TX 79604
915 675-5311
approval date: 3/31/93

International Mobile Air Conditioning Assn.

P.O. Box 9000
Fort Worth, TX 76147-2000
817-338-1100
approval date: 6/29/92

The Greater Cleveland Auto Dealers Assn.

6100 Rockside Woods Blve. Ste. 235
Independence, OH 44131
216 328-1500
approval date: 8/12/92

Mainstream Engineering Corporation

200 Yellow Place
Rockledge, FL 32955
407 631-3550
To obtain training and testing via the Internet, log on to www.epatest.com
approval date: 9/22/96



The Small Business Environmental Assistance Program's (SBEAP) mission is to help Kansas small businesses comply with environmental regulations. SBEAP operates through a consortium of the University of Kansas, Kansas State University and Wichita State University. SBEAP is funded through a contract with the Kansas Department of Health and Environment. SBEAP services are free and confidential. This fact sheet was published by Kansas State University's Pollution Prevention Institute. For more information, call 800-578-8898 or send e-mail to SBEAP@ksu.edu. Our Web address is <http://sbeap.niar.twsu.edu>. The University of Kansas, Kansas State University and Wichita State University are EEO/AA providers.