

United States
Environmental Protection
Agency

EPA 430-F-95-079
May 1995

Office of Air and Radiation (6205J)



Refrigeration, Your Business, and the CFC Phaseout



United States
Environmental Protection Agency
EPA Publications Clearinghouse
P.O. Box 42419
Cincinnati, OH 45242

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Penalty for Private Use \$300

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PERMIT NO. G - 35

Printed on Recycled Paper



May 1995

Dear Business Owner or Manager:

If you operate a business that depends on commercial refrigeration equipment, changes are occurring that you need to be aware of. An international treaty to protect the Earth's ozone layer bans the production at the end of 1995 of two refrigerants commonly used in commercial refrigeration equipment (R-12 and R-502) which cause ozone depletion. Fortunately, alternatives are now widely available to replace these ozone-depleting refrigerants.

As part of EPA's efforts to achieve a smooth transition to the non-CFC refrigerants, we have produced this brochure for owners and managers of small businesses using commercial refrigeration equipment. You will find:

- Information about regulations affecting the handling of CFC and HCFC refrigerants;
- Guidance about switching to alternative refrigerants; and
- A list of sources of additional information.

Please remember that as we near the time for the CFC production ban, the worst action is no action. Consider switching to non-CFC refrigerants during the next regular servicing of your refrigeration equipment.

Mary D. Nichols
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Office of Air and Radiation, USEPA

the availability of CFC refrigerants will likely decrease and costs increase. The next time you have your refrigeration equipment serviced would be a good time to consider switching to one of the alternative refrigerants now widely available for use in existing equipment. Increasingly, the alternatives are becoming cheaper than the CFC refrigerants they replace.



What is the CFC production ban and how is it being implemented?



At present 150 countries have signed the Montreal Protocol on Substances That Deplete the Ozone Layer. The Protocol calls for an international ban on production of CFCs and other ozone-depleting substances.

Under the Protocol and the federal Clean Air Act, EPA has banned production of CFCs at the end of 1995. Production of R-12 (a CFC) and R-502 (which contains a CFC) stops at that time. HCFC-22 will be produced until 2010 for use in new equipment and until 2020 for use in equipment made before 2010. EPA also requires recycling of CFC and HCFC refrigerants by certified technicians during repair or disposal of refrigeration equipment. As of November 1995, more refrigerants -- including HFCs -- are likely to fall under the Clean Air Act no-venting requirement.

Questions & ANSWERS



How will the production ban on CFCs affect me?



When the production ban goes into effect, chemical companies will no longer be allowed to produce CFC refrigerants. You will still be allowed to use CFCs in your equipment, but over time



How can I get ready for the CFC production ban?



Start by developing a plan. This plan could be as simple as a table listing each unit, the type of refrigerant, age, anticipated replacement date and type of refrigerant to be used during retrofit (if unit is not to be replaced soon). Check with your service contractor as well as your equipment and refrigerant manufacturers for recommendations. Then be pre-

pared to take advantage of routine servicing to perform the retrofits and to replace equipment with non-CFC equipment when it is near the end of its useful life.

Q **What are my options for managing the CFC phaseout?**

A You have three basic options. You can take steps to conserve refrigerant as you service your equipment, so that you can keep your existing equipment operating as long as possible remembering, of course, that CFC refrigerant supplies will keep dwindling. Or, you can retrofit your existing equipment so that you are able to use the new alternative refrigerants. Finally, you can retire equipment that is near the end of its life and replace it with non-CFC equipment. Replacement can reduce operating costs if new energy-efficient equipment is selected.

Q **When is the best time to switch to the alternative refrigerants?**

A When you switch is up to you. You can move to the alternative refrigerants all at once or in stages. It is important, however, that you have a plan for making this transition. The best time to switch may be during the next routine scheduled servicing. Do not wait to make the change during emergency servicing--doing so may lead to problems and will almost certainly cost you more money.

Q **What are the differences among the new refrigerants on the market?**

A For converting or replacing CFC equipment, two kinds of alternative refrigerants are now available: HCFCs and HFCs. HFC-134a, HFC blends, and HCFC-22 are used in both conver-

sions and new equipment. HCFC blends are generally used only in conversions. Ammonia is also an option for new equipment where safety codes permit its use. Which substitute is appropriate for your equipment will depend on the type of equipment you have and its operational requirements. EPA does not recommend any one alternative refrigerant over the others. Check with your equipment manufacturer and service contractor to make the decision that is right for your equipment. The changes involved in shifting to an alternative may be limited to changing oil or may include replacing gas-kets, valves or other components. Recommended procedures now exist for most equipment.

Q **What should I expect of my contractor and/or service technician?**

A Your certified contractor or service technician is in the best position to offer advice on how to comply with the law, which equipment to deal with first, and what is involved in reducing and eliminating CFC consumption.

Q **Why is the production of CFCs being banned?**

A The ozone layer is a band of gas 6-30 miles above the Earth that protects us from the sun's harmful ultraviolet (UV) rays. Refrigerants containing chlorofluorocarbons (CFCs) and, to a lesser degree, hydrochlorofluorocarbons (HCFCs) harm the ozone layer when they leak out of equipment or are vented. These chemicals are carried into the upper atmosphere by the wind; there they release chlorine atoms which destroy ozone molecules. A damaged ozone layer allows more UV rays to reach the Earth's surface, where they can cause higher rates of skin cancer, eye damage, and weakened immune systems. Excessive UV exposure can also harm crops and ocean life.



Where can I get additional information?



There are many sources of help for you. Start by calling the EPA Hotline at (800) 296-1996 for information about approved alternatives, general guidance for equipment owners and case histories. Call the manufacturers of your existing equipment for "how-to" guidance to convert existing equipment and performance information about the new refrigerants. Talk to your service contractor about the alternatives, and get another opinion if you don't like what you hear. Trade associations listed below are another source.

This booklet was developed by EPA in cooperation with:

- Air Conditioning Contractors of America
202-483-9370
- Air Conditioning and Refrigeration Institute
703-524-8800
- Food Marketing Institute
202-452-8444
- Mechanical Service Contractors of America
301-869-5800
- National Association of Convenience Stores
703-684-3600
- National Grocers Association
703-437-5300
- National Refrigeration Contractors Association
215-564-3484
- Refrigeration Service Engineers Society
708-297-6464

CHECKLIST OF ACTIONS YOU NEED TO TAKE...

For equipment owners:

- Consider shifting to an alternative refrigerant the next time servicing occurs
- Develop a retrofit/replacement plan
- Make sure your service technician is certified
- Repair substantial leaks in equipment with a refrigerant charge greater than 50 pounds
- Consider repairing leaks in all your equipment
- Maintain service records
- Sell used CFC and HCFC refrigerants only to EPA-certified reclaimers
- Use alternative refrigerants deemed acceptable by EPA

For service contractors:

- Make sure your technicians are certified
- Use certified equipment to recover and recycle refrigerants containing CFCs or HCFCs (including blends)
- Provide equipment owner with service records for equipment with a refrigerant charge greater than 50 pounds
- Sell used CFC and HCFC refrigerants only to EPA-certified reclaimers
- Use alternative refrigerants deemed acceptable by EPA