



Choosing and Using Alternative Refrigerants for Motor Vehicle Air Conditioning

Ozone Protection Hotline (800) 296-1996

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Changes from the February 25, 1998 version: changed name of Free Zone manufacturer.

Background

Scientists worldwide have concluded that CFC-12 and other chlorofluorocarbons deplete the ozone layer. As a result, over 150 countries have signed a treaty to protect the earth's ozone layer called the Montreal Protocol. In the US, the Protocol is implemented by the Clean Air Act, and regulations issued under the Act ended the production of CFC-12 for air conditioning and refrigeration uses on December 31, 1995.

CFC-12 (also known by the trade name Freon) was widely used in air conditioners for automobiles and trucks for over 30 years. While new vehicles no longer use CFC-12, most vehicles built before 1994 still require its use for servicing. As a result, 30 million cars or more may need conversions to use an alternative refrigerant should the air conditioning develop a leak after CFC-12 is no longer available.

Note: there are several other relevant fact sheets available online and through our hotline.

Significant New Alternatives Policy (SNAP)

In 1994, EPA established the SNAP Program to review alternatives to ozone-depleting substances like CFC-12. Under the authority of the 1990 Clean Air Act (CAA), EPA examines new substitutes for their ozone-depleting, global warming, flammability, and toxicity characteristics. EPA has determined that several refrigerants are acceptable for use as CFC-12 replacements in motor vehicle air conditioning systems, subject to certain use conditions. This fact sheet lists the use conditions in detail and provides information about the current crop of refrigerants.

It is important to understand the meaning of "acceptable subject to use conditions." EPA believes such refrigerants, when used in accordance with the conditions, are safer for human health and the environment than CFC-12. This designation does not mean that the refrigerant will work in any specific system, nor does it mean that the refrigerant is perfectly safe regardless of how it is used. Finally, note that EPA does not approve or endorse any one refrigerant that is acceptable subject to use conditions over others also in that category.

Note also that EPA does not test refrigerants. Rather, we review information submitted to us by manufacturers and various independent testing laboratories. Therefore, it is important to discuss any new refrigerant with your vehicle dealer and shop technician before deciding to use it, and in particular to determine what effect using a new refrigerant will have on your warranty. Before choosing a new refrigerant, you should also consider whether it is readily and widely available, and your technician should consider the cost of buying recovery equipment for blends or recovery/recycling equipment for HFC-134a. Additional considerations about purchasing CFC-12 substitutes can be found in EPA's fact sheet titled "[Questions to Ask Before You Purchase an Alternative Refrigerant.](#)"