

THE FACTS ON HYDROCARBON REFRIGERANTS

Hydrocarbons are natural, non toxic, non ozone depleting replacements for CFC refrigerants, importation and production of which were banned from December 31st 1995. Hydrocarbon refrigerants are natural replacements for CFC, HFC and HCFC refrigerant gases, and are:

- safe to use with proper handling.
- highly efficient, reducing energy use in refrigeration and air conditioning systems
- able to replace CFC R12; CFC R22, and HFC R134a refrigerants in existing systems without components or oils having to be changed.
- economical - low purchase price as well as lower system running costs.

Hydrocarbon refrigerants have been in use since 1867, and, in conjunction with ammonia, were the most widely used refrigerants prior to the introduction of chlorinated fluorocarbon refrigerants in the 1930s. Australia is a major producer of hydrocarbons, which are processed for a wide range of applications, such as fuels, lubricants, plastics and chemicals. Hydrocarbon gases are used extensively as pressure pack propellants: for portable and static energy purposes: and now as replacements for chemical refrigerants

HYDROCARBON REFRIGERANT SAFETY

Like many commonly used commodities such as petrol, natural gas and electricity, the use of HC refrigerants requires common sense and observance of adequate safety procedures. It is important to understand the volume of hydrocarbon refrigerant involved in motor vehicle air conditioning and refrigeration system applications. A typical car air conditioning system contains about a coffee mug full of liquid refrigerant, and a small refrigerator contains about an eggcup full.

Australian Standard AS1596 - 1989 (LP Gas Storage and Handling) established safety guidelines for storage and handling of liquefied petroleum gas products, which include hydrocarbon refrigerants. Australian Standard AS 1677-1998, includes comprehensive procedures for the safe use of all refrigerants, including Hydrocarbons.

In all applications hydrocarbon refrigerants are much safer for the consumer than chemical refrigerants, most of which degrade producing toxic by products following accidental release in the presence of an adequate heat source.

Research by International risk assessment engineers, the Arthur D. Little Group indicates an extremely low risk to motor vehicle occupants from accidental release of hydrocarbon refrigerant. The School of Mechanical & Manufacturing Engineering, University of N.S.W., is a world leader in the application of these products, and have documented the safety and efficiency of HC refrigerants in motor vehicle air conditioners. There is also overwhelming evidence of the environmental benefits and safety of HC refrigerants.

The most significant point to be made is that there is a total lack of technical evidence to refute the case for hydrocarbon refrigerants.

Australia is particularly vulnerable to the effects of Global Warming and the degradation of the Ozone layer. At this time the supply of CFC refrigerants is practically exhausted. HCFC (hydrochlorofluorocarbon refrigerants) do less damage to the Ozone Layer than CFCs but are still detrimental and a cause of global warming. Currently it is intended that HCFCs be phased out by the year 2015, or sooner. Several European countries have decided on an earlier phase out period for HCFCs. HFC refrigerants (of which R134a is one of the more common types) have not been a universal success. Apart from having a very high Global Warming Potential, they have proved to be excessive energy consumers in most applications; poor performers in high ambient conditions; and are particularly dangerous when exposed to moisture or a heat source causing degradation. CFC, HCFC and HFC refrigerants are easily replaced with a hydrocarbon product.

Hydrocarbon refrigerants have been universally adopted by all major refrigerator manufacturers in Europe. The refrigeration systems of four out of five of the largest UK supermarket chains have been- converted over to HC refrigerants with the obvious advantages of being recognised as environmentally conscious, whilst energy savings have been outstanding. Chinese refrigerator design and manufacture is being geared to hydrocarbon technology instead of the American HFC chemical refrigerants.

The first Australian hydrocarbon refrigerator, using 'Greenfreeze' technology was produced by Email in February 1995. Email were promptly presented with a Federal award for their contribution to the protection of the environment. The occasion was also commended by Greenpeace. Email will be providing the latest hydrocarbon technology refrigerators for the Olympic village at the Sydney 2000 Olympics.

Greenfreeze has become the dominant refrigerant technology in Europe. Many models of 'Greenfreeze' refrigerators are now on sale in Germany, Austria, Denmark, France, Italy, Netherlands, Switzerland, and Britain. All of the major European companies, Bosch, Siemens, Electrolux, Liebherr, Miele, Quelle, Vestfrost, Whirlpool, Bauknecht, Foron, and AEG are marketing Greenfreeze-technology based refrigerators. 100 percent of the German market has converted to Greenfreeze technology.

In Australia, HyChill has distributed many tonnes of HR12 and HR22/502 refrigerant since late 1995, (enough refrigerant to charge the systems of hundreds and thousands of motor vehicles), and not one safety or flammability incident has been reported. However, since 1996, four car air conditioning fires have been reported - all four vehicles were charged with fluorocarbon refrigerants - one with CFC R12 and three with HFC R134a, supposedly non flammable refrigerants! The point to be noted here is that all refrigerants become flammable due to the oil vapour content of the gases when being discharged from systems.

HyChill Hydrocarbon refrigerants are now available in all states of Australia.

HYDROCARBON REFRIGERANTS ARE THE MOST SIGNIFICANT ADVANCEMENT IN ENERGY EFFICIENT REFRIGERATION AND AIR CONDITIONING THIS CENTURY.

HYCHILL INTERNET SITE: www.hychill.com