

Refrigerants in Commercial Foodservice Equipment, What's the Scoop?

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By The Editor

The evolution of refrigerants has been fundamental to the way we live today and the development of the commercial foodservice industry. We all know what a refrigerator is, but most of us spend little time thinking about the refrigerants that make them work. This blog explains what refrigerants are and why you need to know about them more than ever when it comes time for [commercial refrigeration repair](#) or [replacement for your walk-in coolers](#) and freezers.

Refrigerants are substances used in refrigeration and air conditioning systems to control temperatures and transfer heat. They are essential to the preservation of food, medical supplies, and other items that require a consistent temperature.

In the early days of refrigeration, natural substances such as snow, ice, and evaporated water were used, this was not very efficient and very difficult to control. Eventually, the use of chemical refrigerants was developed. These early chemical refrigerants were more efficient and allowed more precise temperature control.

The first commercial chemical refrigerant was ammonia, which was used in the early twentieth century. It was soon replaced by hydrochlorofluorocarbons (HCFCs). HCFCs were more energy-efficient than ammonia and were less damaging to the environment. However, they were still harmful to the ozone layer, which led to the development of hydrofluorocarbons (HFCs). HFCs are non-ozone depleting and have a lower GWP (global warming potential).

Commercial foodservice refrigerators are built to last, therefore our field service teams are regularly tasked with repairing units that contain older refrigerants. Working on these older units becomes less straightforward as legislation changes. For instance, one of the early refrigerants to be phased out for environmental reasons was R-22, an HCFC. In 2020 the production and importation of R-22 were ended and replacement HFC refrigerants such as R-404A, R-134a, R-410A, and R-407C became widely available. Now it is the turn of these replacement refrigerants to be phased out which will start in January 2024. Because of this, more new blended refrigerants have been developed such as R448A and R449A, and R452A, all of which are better for the environment with a 50% reduction in GWP.

It is thought that one day all HFC refrigerants will be phased out, which is already creating demand for more eco-friendly alternatives. This has led to the development of hydrocarbons (HCS's) such as refrigerant-grade propane, R-290, and isobutane R600a. These refrigerants are non-ozone depleting, non-toxic, and have a very low GWP. They are also more energy-efficient than traditional refrigerants and offer better thermodynamics, don't worry, while these refrigerants are flammable, they only require an incredibly small amount of refrigerant to work, so are very safe.

If you have an older refrigerator or are having issues with your current unit or simply need a new unit then navigating through this subject can seem overwhelming, but luckily there are resources to help you. Your local foodservice equipment dealer and rep groups, as well as your service company, will be able to advise you on the best route to take to maximize your equipment's lifetime ROI.

At General Parts Group, we deal with the fix-or-replace challenge almost every day. Please do not hesitate to reach out to your local branch at (888) 498-1238 for further advice.

Need a quote for commercial refrigeration repairs or replacement? Call the number above or if you would prefer, request a quote here.