R290 REFRIGERANT BENEFITS

RSG brands Master-Bilt and Norlake are dedicated to providing the most environmentally friendly equipment while still providing optimum performance. Over the years, the need for more eco-friendly refrigeration has increased and we have answered the call by carefully considering and testing various alternatives. Through our research, we determined that R290 refrigerant offers unparalleled advantages for most equipment types.

What Is R290 Refrigerant?

R290 refrigerant is a natural, safe, environmentally friendly and cost-effective alternative refrigerant to man-made synthetic hydrofluorocarbon (HFC), chlorofluorocarbon (CFC) and hydrochlorofluorocarbon (HCFC) refrigerants. Due to these characteristics, it is EPA approved for many residential, industrial and commercial refrigeration and AC applications and is projected to be a future proof, long term refrigerant with respect to government regulations.

R290 Is Natural And Non-Toxic

R290, commonly known as propane, is a natural hydrocarbon (HC) byproduct of natural gas refinement and may be used in medium and low temperature refrigeration applications. Since it is non-toxic and environmentally friendly, it does not need to be recaptured or recycled during service like other refrigerants.

R290 Is Safe

While R290 is classified as a flammable refrigerant, the amount that can be used in a refrigeration system is restricted to a safe charge limit. In addition to the increased safety, the lower charge limit also reduces overall cost of ownership as less refrigerant is needed per system.

R290 Is Environmentally Friendly

R290 is environmentally friendly as it has a 100 year GWP (global warming potential) of 3. GWP is the measure of the ability of a gas to trap heat in the atmosphere which is a leading factor in climate change. The lower the number the better. The table below shows the GWP of some common HFC refrigerants.

Refrigerant	GWP (100 year)
R290	3
R449a	1400
R404a	3920
R134a	1360

R290 Is Cost Effective

One of the characteristics of R290 that makes it especially effective as a refrigerant is its high thermal conductivity. Simply stated, R290 transfers heat much better than other refrigerants. This in turn results in less refrigerant mass flow for the same heat transfer which results in energy savings. **Field comparison tests** have shown that systems operating with R290 refrigerant have electrical energy savings of 30 to 50+% over legacy systems using HFC refrigerants.

Refrigeration systems operating on R290 also have lower compressor pressure at the point where refrigerant exits (often referred to as the “high side” of the refrigeration cycle). This means the compressor operates at a lower temperature which extends its life and, again, lowers overall cost of ownership.

Summary

With the expected EPA ban on the use of HFC refrigerants in certain industry sectors, including commercial refrigeration, within the next two to three years, R290 systems are available and ready to use today. In addition to meeting the EPA’s future refrigerant requirements, they result in a greatly reduced cost of ownership and environmental footprint.

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