



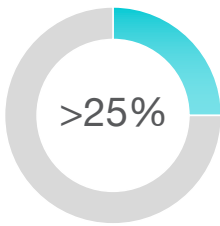
Technology: R600a Refrigerant

OASIS Bottled and Mains-Fed Coolers now use the environmentally friendly R600a refrigerant!

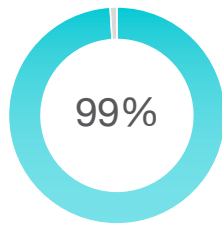
Following extensive development and field testing, the entire range of water coolers (Bottled & Mains-Fed) are now supplied with the environmentally friendly hydrocarbon refrigerant isobutane (R600a). OASIS has independently and successfully tested the Ecooler range against all European safety standards related to the use of flammable refrigerants.



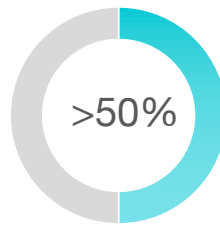
BENEFITS



>25% reduction in energy consumption compared to standard R134a refrigeration system.



The Global Warming Potential of R600 is more than 99% lower than that of R134a



>50% reduction in refrigerant charge.



OASIS are ahead of the curve and are already F-Gas compliant.



Now available across the entire OASIS Mains-Fed and Bottled Water Cooler range.



HYDROCARBONS

BACKGROUND

In the 1970's, scientists discovered the dangerous impact that CFC's have in the Earth's atmosphere. They were destroying the ozone layer which protects the Earth from UV-B radiation which causes genetic damage to the cells of people, animals and plants. At the time almost all refrigerated products were using CFC's as their refrigerant.

In 1987, an international treaty (Montreal Protocol) was signed. This began the phase out of so-called Ozone Depleting Substances such as CFC's and HCFC's. Refrigerators then began to use HFC refrigerants (such as R134a). These substances do not harm the ozone layer, but are classed as greenhouse gases with a high Global Warming Potential (GWP) – R134a has a GWP of R134a is 1,430, which means that 1kg of R134a emitted to the atmosphere has the same effect on global warming as 1.43 tonnes of CO₂. Environmentalists have been trying for many years to limit the use of HFC refrigerants –the efforts can be see in the EU's F-gas Regulation; where they have designed a process to cut emissions by two-thirds by 2030 compared with 2014 levels.

USE OF HYDROCARBONS

If your refrigerator at home is less than 20 years old, then it almost certainly contains hydrocarbon (HC) refrigerants. The move from CFC's that destroyed the ozone layer to HC refrigerants has been led by the environmental organisation Greenpeace.

The first "Greenfreeze" refrigerators were introduced in 1992 in Germany – since then over 700 million Greenfreeze refrigerators (representing 40% of the global market) have been manufactured and sold.

BENEFITS OF HYDROCARBONS

Reduction in GWP from 1,430 (R134a) to < 3 (R600a) helps to combat global warming and climate change.

Independent testing carried out for OASIS has indicated that 25% less electrical power is consumed using the refrigerant R600a rather than R134a in a water cooler.

R600a has a short atmospheric lifetime of less than one year, in comparison the 16 year lifecycle of traditional R134a refrigerants.

SAFETY OF HYDROCARBONS

The major concern regarding the use of HC refrigerants such as R600a is the flammability of the gas. This is a valid concern – after all R600a (or isobutane) is the fuel used in cigarette lighters. However, stringent European safety standards for the use of HC refrigerants have been in place for a number of years. OASIS has independently and successfully tested the Ecooler range against all European safety standards related to the use of flammable refrigerants.

Key results are shown below:

- **Refrigerant charge:**
 1. Standard(1): Maximum allowed refrigerant charge is 150g
 2. ecooler: Actual gas charge is 20g
- **Gas leak:**
 1. Standard(1): In case of a refrigerant leak, the concentration of gas measured at the appliance's electrical components must not exceed 75% of the Lower Explosive Limit (LEL)(2)
 2. ecooler: Maximum concentration of gas measured at 38%of LEL

