

FUTRAHEAT HEAT PUMP USES SOLSTICE® ZD REFRIGERANT



The need for heat is responsible for 70% of today's global industrial energy demand, most of which is generated by gas. Decarbonising heat is therefore imperative to achieving the worldwide goal of net zero emissions. However, this is difficult to do technically, which is why it has not been significantly tackled by industry to date.

Pushing the boundaries of heat pump technology and heat pump applications will help achieve this. One solution is high temperature heat pumps, which take waste heat and transform it into heat that can be reused. According to the International Energy Agency's "Net Zero by 2050" report, high temperature heat pumps will become a cornerstone technology for displacing fossil fuel heating to achieve net zero CO2 emissions.

Accordingly, Honeywell is collaborating with UK-based Futraheat on an Innovate UK-funded project to do just that: the development of an advanced yet cost-effective heat pump that will help companies spanning different industrial segments to radically reduce their carbon emissions.

At the core of the new solution is Futraheat's unique TurboClaw®

compressor technology, which is powered by Honeywell's non-flammable, ultra-low-global-warming-potential (GWP) Solstice® zd (R-1233zd) refrigerant. Solstice zd functions as a replacement for R-123 refrigerant, which is being phased out due to environmental concerns.

Developed through a £500,000 Innovate UK grant, Futraheat's TurboClaw technology can operate at reduced speeds without oil, lowering manufacturing, operating and heating costs. Moreover, it can recover waste heat from temperatures as low as 70°C, deliver high grade heat up to 150°C, and support modern, low GWP refrigerants such as Solstice zd.

Solstice zd is ideal for such applications because it is a long-term, environmentally preferable and economical refrigerant that helps

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producers like Futraheat and their customers maximize energy savings and reduce carbon emissions. Based on hydrofluoro-olefin technology, Solstice zd is non-flammable with a GWP of 1. It offers better capacity and similar efficiency to R-123 in low-pressure centrifugal chillers to cool large buildings and infrastructure, and it can be used as a working fluid in high temperature heat pumps.

Solstice zd and other Solstice-branded refrigerants are the result of decades of Honeywell industry and development know-how. In fact, worldwide adoption of Honeywell Solstice products has

resulted in the reduction of more than 250 million metric tons of CO₂ to date, equal to eliminating the emissions from more than 52 million cars.

The Futraheat heat pump enabled by Honeywell Solstice is ideal for processes requiring heat up to 150°C in verticals such as food and beverage, utilities (wastewater), pharma, FMCG, plastics, chemicals, and paper and board. Here, the solution promises to reduce energy consumption by 80%, shave 25% off typical fuel bills, deliver CO₂-free heat when powered by renewable electricity, and achieve payback in just two to three years.



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For More Information:

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