



CUSTOMER INSIGHT: COVIRAN

Food Cooperative Looks to a Greener Future

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Manuel Serafín Pérez, Industrial Refrigeration Manager, Covirán

Scenario: Placing Refrigeration at the Heart of Sustainable Operations

Covirán is committed to sustainable development, thus responsibly using all their resources. To achieve this, Covirán works hand-by-hand with members, workers, suppliers and clients.

Covirán is a food distribution company made out of more than 2,800 small and medium-sized independent retailers. Currently this cooperative ranks number 2 in Spain in terms of sales, and number 3 in Portugal. In 2014, Covirán had over 3,245 supermarkets in the Iberian Peninsula.

Covirán's commitment is to the social economy, through continuous investment in local people and communities. The extensive development in recent years and the success of the expansion project into Portugal have earned them awards and recognition.

To increase efficiency in storage and distribution, Covirán serves customers through a complete logistics network of 27 distribution platforms, 3 of them in Portugal. The logistics network is constantly adapting to both the structure and number of warehouses. This has been achieved via a corporate commitment to the incorporation of new members, as well as the expansion and consolidation of the Cooperative in new regions, helping to optimize resources and providing flexibility in order to reach locations not previously served.

High on the business agenda for Covirán is environmental care, and so when the Cooperative needed to install a new

refrigeration system at a logistics centre near Madrid, it worked closely with its specialist partner Systemfrost to develop a solution that would combine best-in-class performance with sustainability.

Systemfrost designed a cascade system utilizing Honeywell's Solstice N13 (R-450A) and CO₂ (R-744), focusing on meeting key criteria around energy

efficiency, emissions reduction and refrigeration performance. Honeywell's Solstice N13, selected for the MT system, is a new generation HFO refrigerant blend that is a non-flammable, non-ozone depleting replacement for R-134a, with 60% lower Global Warming Potential (GWP).





Results

- The system using Solstice N13 (R-450A) is expected to reduce annual energy consumption by more than 3%.
- The system using Solstice N13 is expected to achieve lower direct CO₂ emissions of 60% per year compared to a comparative system using R134a.

Feedback: A Greener Approach to Food Logistics

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“R-450A has been easy to handle. We considered the customer’s request to improve carbon footprint and worked closely with engineering consultant Tewis to accommodate the lowest possible GWP refrigerant into the most efficient design. R-450A (Solstice N13) provides us with a simple solution. So far, the results have been very positive.”

Eloy Moreno, Systemfrost

System Background: Contributing to Covirán Coslada Goals

The Covirán Coslada (Madrid) logistics warehouse extends in total to 12,000 m². The centre employs around 50 people and distributes to Spain’s northern regions.

The new refrigeration installation designed by Systemfrost includes 3 freezer rooms, one dual-temperature room and a large, chilled dispatch area, and incorporates two evaporative condensers, one for the CO₂ side of the system and the other for the mid temperature section.

The machine room has been constructed in a separate housing to optimize ventilation, to afford protection from ambient conditions (rain/wind) and is elevated to minimize material ingress.

The system is remotely monitored by temperature deviation alerts, ensuring a service resolution in less than 2 hours for frozen food and less than 4 hours for chilled food, thereby securing the centre’s operations and safeguarding product quality.

The new installation satisfies a key requirement of Covirán’s CSR (Corporate Responsibility Programme) to meet sustainability goals as well as social and economic criteria. This commitment extends to a continuous search for the most competitive and environmentally-friendly refrigerants to minimize emissions and improve energy consumption – hence the decision to invest in Solstice N13.

System Architecture

Total charge: 1,020kg of R-450A

	Dispatch area	Dual temperature room	Freezer rooms	
			CO ₂ condensing	Low temperature
Packs	Zanotti			
Compressors	2 x 4MM-22X	4 x Emerson 6MU-40X	1 x 6MMD-30X + 2 x 6MM-30X	2 x 4MA-22X
Controls	Eliwell			
Tevap °C	0	-10°C	-10°C	-30°C
Tcond °C	+45°C	+45°C	+45°C	+45°C
Cooling capacity kW	53.8	159	96.6	74.3
Refrigerant	Solstice® N13 (R-450A)	Solstice N13 (R-450A)	Solstice N13 (R-450A)	CO ₂ (R-744)

Sector Perspective

Realising the Benefits of Honeywell Technology

Each year, the world uses enough refrigerant to keep food fresh in 240,000 supermarkets and to cool more than 300,000 commercial buildings. Honeywell is committed to investing in the development and introduction of new offerings to make it easier for industry to adopt and use alternatives to higher global warming potential refrigerants.

Solstice N13 (R-450A) is a hydrofluoro-olefin (HFO) blend for chillers, as well as medium-temperature applications such as supermarket display cases and self-contained refrigeration units that require a non-flammable refrigerant solution. Solstice N13 is designed to replace R134a and offers a GWP that is 60 percent lower than the GWP of R134a. Solstice N13 provides similar performance to R134a along with improved energy efficiency.



Available tools

Simulation software

Honeywell's refrigerants modelling software is a free-download software program that eliminates the guesswork involved in selecting a refrigerant by allowing refrigeration engineers to run simulations based on actual data. The tool runs property calculations of refrigerants, conducts thermodynamic evaluations of air conditioning and refrigeration cycles, and provides a first principle thermodynamic comparison of new alternative refrigerants for retrofit applications or new system designs.

The software models systems from simplified basic cycles to large, complex refrigeration systems. The results can be exported to Microsoft Excel, where the data can be manipulated in a variety of ways. The software also creates typical Mollier diagrams (Pressure-Enthalpy, Temperature-Entropy).

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Smart phones apps

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Literature

Honeywell has a wide range of literature available on Solstice® N13 including case studies, customers references, etc.

Information and contact

For information and support on new applications, contact your local Honeywell representative, visit www.honeywell-refrigerants.com/europe or send us an email at fluorines.europe@honeywell.com



RESPONSIBLE CARE
OUR COMMITMENT TO SUSTAINABILITY

RESPONSIBLE CARE

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Our commitments:

The safety of our employees
The quality of our products
Being responsible stewards for the protection of the environment, the communities in which we operate and our customers