



Opteon™ XP10

Refrigerant (R-513A)

Opteon™ XP10 Provides a Lasting Answer for Commercial Refrigeration Systems



Background

Between the new European F-Gas regulation and the recent technological advances in refrigerant and integrated systems, there is now the possibility of finding two of the same supermarkets 10 km apart from each other with completely different refrigeration and air-conditioning systems. Many factors have led to this sudden change in cooling technology. Research and analysis carried out by Tewis Smart Systems, a leader in energy consulting, and

FRIEX, a leading refrigeration and air conditioning contractor, shows that supermarkets are looking to reach their efficiency and cost cutting goals through a variety of solutions. These include, but are not limited to, modernizing their central refrigeration systems, adopting low GWP and CO₂ refrigerants, and integrating refrigeration and air-conditioning systems. Many supermarkets have even completed all three, such as the Aldi in Dos Hermanas, Spain.



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The supermarket chain Aldi, with more than 5.000 stores worldwide, was looking for a refrigerant solution that met their needs in terms of F-Gas compliance without sacrificing performance. For their new Dos Hermanas location, Aldi reached out to Tewis to help design a cooling system to meet this goal. Tewis recognized the need for a low GWP refrigerant and immediately determined that Opteon™ XP10 (R-513A) from Chemours was the ideal solution. With a GWP of 573 and a 56% reduction from R-134a, Opteon™ XP10 would allow for Aldi to meet the F-Gas regulation without having to sacrifice capacity and energy efficiency.

“We chose Opteon™ XP10, because it offered the optimal balance of properties when compared to other replacement options,” said Javier Atencia, Technical Manager for Tewis. “We are always looking for ways to implement Opteon™ refrigerants, as we know that they offer better performance for the systems we design as well as for the environment.”

Opteon™ XP10 Refrigerant

Opteon™ XP10 (R-513A) is the ideal replacement for R-134a:

- Low GWP: 56% reduction compared to R-134a
- Excellent capacity and efficiency match for R-134a
- Safety rating A1
- Azeotropic refrigerant with zero glide
- Compatible with existing equipment design/ lubricants

Opteon™ XP10 Properties

ASHRAE Number	R-513A
Lubricant	POE
Boiling Point	-29.2 °C
Safety Classification	A1
Temperature Glide	0 K

Conversion to Opteon™ XP10

The installation was seamless and occurred overnight with limited interruption to business activities. In total, three independent machines were retrofitted – each with a different application within the store:

- Refrigeration rack TN1* (30 kW): dairy shelf murals (-6 °C)
- Refrigeration rack TN2* (39 kW): meat, fish, fruit-vegetable, fourth range (fresh-cut products) and frozen food store units (-8 °C)
- Refrigeration rack AT1: air-conditioning for cash registers area (+5 °C)

“The ease of installation was similar to any other previous refrigerant technology, which allowed for us to set up the system without inconveniencing the customer,” said Juan Carlos Izqueirdo, Technical Manager for FRIEX. “This is extremely important, because if the setup takes too long, it begins to cause our customer downtime; and neither them nor us can afford that”.

Conclusion

While tests are still underway to determine the total cost savings associated with using Opteon™, Aldi is confident in their decision as a result of previous installations. This is because, on top of its improved



environmental profile, many supermarkets have also seen increased energy efficiency when compared to R-134a. This increase in efficiency has encouraged many retailers to switch to Opteon™ XP10, as it offers the optimal balance of performance, environmental sustainability, safety, and cost.

* In Winter, the condensation of TN1 and TN2 refrigeration racks is achieved through a AHU managed by controllers developed by Eliwell especially for this application. Full recovery of the heat energy is achieved in Winter mode.



For more information on the Opteon™ family of refrigerants or other refrigerants from Chemours, visit **[opteon.com](https://www.opteon.com)**

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