



A grocery chain in France using Opteon™ XL20 as their preferred refrigerant solution



Introduction

A grocery chain specializing in fresh produce launched in France in 2017, priding itself on its specially selected product range. Guaranteeing the integrity of their service offering relies on operationally efficient refrigeration systems in the front and back of store.

In 2020 the retail chain began a review of its refrigeration system fluids. Working with the Griffi group of installers and technical design consultants they mapped the route to using low GWP solutions that promoted safety, optimised charge sizes and containment of fluids outside of the store.

Key system facts

500 m²

Typical store sales area

Medium

temperature cooling production

100 / 110 KW

Sales cabinet

25 / 30 KW

Cold rooms

2

refrigeration circuits

with

2

compressors

The project

The first step was to carry out a comparative study between four potential fluid solutions in refrigeration systems: CO₂, R-513A in direct expansion, indirect cooling with glycolic water, water condensing integrals. The study examined each solution in terms of environmental impact, safety and financial risk, considering how best to optimise operational efficiency across all these factors.

Low-GWP solutions such as R-1234ze and R-454C were main considerations for the primary coolant. However, it was the thermodynamic characteristics, performance and range of use which influenced the final move towards R-454C.

Although CO₂ was evaluated as part of the study, it was not selected as a solution because of potential risk of fluctuating operating costs and supply.

The installation process

The deployment of Opteon™ XL20 (R-454C) has been rolled out in selected stores located in Saint Pierre les Nemours, Le Tholonet, and Annemasse, with Gazechim Froid supplying the refrigerant. More projects are lined up in their installation pipeline.

The ongoing operational performance of the fluids continues to be measured and monitored to allow continual optimisation of the system. This is also done for the purposes of cost control and measuring the return on investment.



Visit our case study library to learn more about how customers are choosing Opteon™ solutions to optimise their refrigerant systems and compliance.



© 2023 The Chemours Company FC, LLC. Opteon™ and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC. Chemours™ and the Chemours Logo are trademarks of The Chemours Company.