

FORANE® 427A CASE STUDY Leonidas Factory

In April 2008, Leonidas carried out a retrofit with Forane® 427A at its Plant in Belgium (Anderlecht). The refrigeration unit is in the final tunnel of its chocolate production line.

Unit Description

The installation dating from 1987 is equipped with a semi-airtight 15 CV Frascold compressor with a 35 kW refrigeration output.

The Refrigerant charge is 34 kg.

In order not to interrupt production, the plant's Refrigeration Technicians, are switching chocolate production to a multi-functional line during normal servicing.



Retrofit procedure

A non-toxic, non-flammable and zero-ODP refrigerant, Forane® 427A is a 100% HFC blend which consequently has no impact on the ozone layer (ODP* = 0). It usually requires one oil drainage and its replacement with a POE lubricant. Optimal performance close to R-22 can be achieved without long and costly rinsing of the circuit thanks to a high tolerance to residual original oil in the system.

However, in view of the size and complexity of the installation, the customer decided to replace the damaged compressor with a unit designed for HFC's with a view to phasing out R-22 by the end of 2009.

The new Frascold compressor pre-filled with POE oil is installed, after which an oil replacement is scheduled to convert any residual oil. The dehumidifier filters, solenoid valves and fluid indicators are changed. Thirty kilos of Forane® 427A are loaded from a 61-litre tank.

The pressure regulator is not replaced but superheating is adjusted to compensate for the temperature range of the new Forane® 427A blend and to maintain the same refrigeration output. As a last stage, the technicians check the HP/BP safety units before restarting the installation.

The 34 kg of recovered R-22 are sent to Climalife for reprocessing.

*ODP: Ozone Depleting Potential

Comparative data

The operation has been a real success. These results are in full agreement with those obtained during previous retrofit operations monitored by Arkema (e.g. low temperature refrigeration units in supermarkets and in the pharmaceutical industry, medium temperature refrigeration units in the food industry, water chillers, etc.).

The Leonidas team is satisfied and anticipates converting the 29 other refrigeration units in its production line to Forane® 427A by 2009 as part of their environmental policy.

	Units	R-22	Forane® 427A
Installation load	Kg	34	30
Evaporation temperature	°C	-4	-4
Evaporation pressure	Bar	3,4	3,6
Air temperature at tunnel exit	°C	5	5
Condensation temperature	°C	44	40
Condensation pressure	Bar	15,8	15
Refrigeration output	Kw	35	35



*Move a step forward with one of the lowest GWP** on the market! Today, with Forane® 427A, you can combine performance with simplicity, and meet regulatory requirements.*

***Global Warming Potential*

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Arkema Business Unit Fluorés
420 rue d'Estienne d'Orves
93700 Colombes- France
www.arkema.com

www.forane427a.com