



CRETA FARM CUTS ENERGY BILL IN HALF

Using CRANE Temper-15 in secondary cooling

Creta Farms is a leading Greek producer of deli meats and food products. The company serves both consumer and business markets and, in addition to its strong presence in Greece, exports its products to international markets.

THE CHALLENGE

Following a major fire at its production facility, Creta Farms undertook a complete rebuilding of their plant in Crete. EcoRef, an Athens-based engineering consultancy specialising in industrial refrigeration, was commissioned to design the cooling system.

Crete Farms main targets with the new design were to be compliant with the new F-gas regulations and to reduce the energy consumption.

THE SOLUTION

The solution ended up in a modern secondary refrigeration system with high reliability. The new system was designed with R407F as the primary refrigerant and CRANE Temper-15 as heat transfer fluid. The old R22 compressors were in good condition and could be saved and used in the new installation.

A buffer tank of 8m³ stores CRANE Temper-15 at -6°C and service the refrigerated areas through a set of electronically controlled pumps.

The freezer circuit remained a R407F-DX system with electronic expansion valves and Energy Efficient Defrosting.

Defrosting was achieved by a heat exchang-

er placed before the evaporative condenser that gained heat from the refrigerant's hot side (discharge line going to the evaporating condenser from the compressor). The refrigerant warmed up CRANE Temper-40 through the heat exchanger, which was stored in a buffer tank serving defrosting circuit. By this method condensing temperature and pressure were reduced before entering the condenser, achieving a more efficient refrigeration cycle.

THE RESULT

The new installation reduced the plant's energy consumption by more than 50%. The low-pressure system enabled the use of smaller, more cost-efficient components while increasing overall reliability. Improved temperature stability resulted in higher and more consistent food quality. In addition to significant energy and long-term cost savings, the facility was designed to fully comply with current F-gas regulations.

INSTALLATION FACTS

Year of installation: 2015

Primary refrigerant: R407F (GWP 1824, ODP 0)

Secondary Refrigerant: CRANE Temper-15 (15,000 L)

Temperatures: HTF -6°C, evap. temp -10°C

Cold room temp. and kW: @ 0-2°C, 330 kW

Freezer room temp. and kW: @ -20°C, 170 kW

Plastic pipes: AquaTherm

Brine defrost: CRANE Temper-40 defrosting the aircoolers (-20°C)

Liquid temperature in/out: -7/-3°C

CRANE TEMPER - THE IDEAL CHOICE OF A HTF

CRANE Temper is an environmentally friendly heat transfer fluid designed for demanding refrigeration applications.

The ready-mixed, non-toxic organic salt solution is formulated with an effective corrosion inhibitor package and is readily biodegradable*. With strong thermal performance, CRANE Temper is well suited for both industrial and food refrigeration.

CRANE Temper can be used in medium- and low-temperature refrigeration systems and operates efficiently in pressurized systems from -60°C up to 180°C . The product is available in seven versions, covering temperature ranges from -10°C to -60°C .

** Readily biodegradable – OECD 301A, 100% in 28 days*

ADVANTAGES WITH CRANE TEMPER

- Low viscosity
- High thermal conductivity
- Reduced energy cost
- Readily biodegradable
- Adapted for the food industry
- Advanced inhibitor technology
- Personalized technical support

GENERAL PROPERTIES

Appearance: Colourless to pale yellowish

Boiling point: Approximately 109°C

pH: 8.5-9.5



**WORLD CLASS PRODUCTS
MADE IN SWEDEN**

ABOUT KRAHN SPECIALTY FLUIDS

KRAHN Specialty Fluids develops and delivers specialty chemical fluids for fire protection and refrigeration applications, supporting industrial and commercial operations where efficiency, reliability and long-term performance are essential. Our solutions are designed to optimize energy efficiency, reduce operational risk and deliver stable performance over time, while also lowering environmental impact.

KRAHN Specialty Fluids is headquartered in Gothenburg, Sweden, and is part of the KRAHN Chemie Group. We supports customers globally through in-house production and technical expertise.

Our refrigeration product CRANE Temper is readily biodegradable.