



CRANE Temper[®]

- a good story

-10 **Multipurpose use with CRANE Temper**

Reliable refrigeration

The Central Market of Salamanca, constitutes the oldest market of supplies of the city. With its pavilions for fruits, vegetables, meats and fish a reliable refrigeration system is of highest importance.

When MERCASALAMANCA, with a total area of 253,000 square meters and serving more than 1,700 users, decided to install an efficient and avant-garde energy solution, an ammonia refrigeration system with indirect systems was chosen.

Since ammonia is toxic it cannot be used in public areas so indirect systems was necessary. In these, glycol (cooling) and CRANE Temper (freezing) was used as heat transfer fluids.

Freezing operation with CRANE Temper

The freezing circuit operating in -35 °C/-10 °C, works exclusively with CRANE Temper as heat transfer fluid, being cooled through a heat exchanger. The secondary system with CRANE Temper-40 serves all low temperature storage chambers for meat and fish.

System information

Refrigeration Power	2,6 MW
Primary Refrigerant	Ammonia
Freezing systems	-35 °C and -10 °C
Heat Transfer Fluid (HFT)	CRANE Temper-40
Defrost HTF	CRANE Temper-55

CRANE Temper, the ideal heat transfer fluid

The secret behind CRANE Temper's excellent fluid and environmental properties lies in the optimal mix of organic salts giving it its very low viscosity. This in turn reduces the overall energy consumption and makes it ideal for industrial refrigeration and food industry. The fluid contains an advanced organic adsorption inhibitor package to ensure an optimal corrosion protection.

CRANE Temper is colorless to yellowish and it is free from nitrites, borates, phosphates, molybdates and silicates. To ensure the high quality of the product, CRANE Temper is always supplied ready-to-use and is available in seven different versions with freezing points from -10 °C to -60 °C.



Heat for free for defrosting

CRANE Temper-55 was also serving the general defrost system. It is designed to obtain the excess heat through an exchanger in the condensation unit of the primary coolant. This system significantly reduces energy consumption compared to electrical defrosting systems. Also, the ice is melted and drained out from the freezer room instead of evaporating, resulting in extended time between the defrosting periods.

State of the art installation

Inaugurated in 2009, it was the most modern wholesale market in Spain, with self-tipping docks, refrigerated booths with customized cold control, warehouses for fruit packaging, etc.

The results have exceeded expectations, both in great reliability and significant savings. Thanks to the thermal properties of CRANE Temper, reduced energy consumption and smaller system components was possible.

-10

-15

-20

-30

-40

-55

-60°C

