



CRANE Temper[®]

- a good story

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Retrofitting with CRANE Temper

Replacing calcium chloride and glycol

When HKScan in Skara, one of Sweden's largest slaughterhouse, was planning a major refit and expansion, the task was to optimize the design in terms of investment, operation and the environment.

An important element was to replace calcium chloride and glycol with a more energy efficient HTF. Following a thorough review of thermal properties, CRANE Temper-20 was chosen for the cooling system at -8°C, CRANE Temper-30 for systems at -17°C, while NH₃ was selected as DX for freezing systems.

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Another element was to recover the heat from the compressors, to be used for defrosting and heating.

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Pay-off from the first moment

With the new design and CRANE Temper as HTF the pump effects could be lowered by 7-10%. It was also possible to choose fan air coolers that were 1-2 sizes smaller (around -10%) than the ones using glycol. This means large investment and energy savings (when talking about MW). Even the pipe dimensions was possible down size.

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System information

Cooling capacity	14,5 MW, where 2MW NH ₃ DX
Refrigerant, charge	Ammonia, 42 tones
Cooling systems	-8 °C and -17 °C
Heat Transfer Fluid (HTF)	CRANE Temper-20 and CRANE Temper-30
Total HTF volume	110.000L

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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.

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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.

-60°C



Fulfill the sustainability aspects

HKScan also had a desire to reduce their dependency on oil and electricity in terms of defrosting and underfloor heating. "We obtained a very good solution," comments the operations and maintenance provider of HKScan's systems. "We have not just achieved lower investment costs. CRANE Temper also have better thermal properties and is less harmful to people and the environment." Not only this, thanks to the heat recovery system, the oil consumption was reduced by 60%.

Smooth operation and support

In addition they explain, "We have also had fewer operational disturbances with CRANE Temper than we had with calcium chloride and glycol".

Retrofitting is always an option to installing new systems. When doing so, material compatibility with CRANE Temper needs to be reviewed. Something that is supported by KRAHN Specialty Fluids.

