

CASE STUDY: Kuehne+Nagel

PROJECT: Azanechiller

STAR DELIVERS ANOTHER COOL SOLUTION FOR LOGISTICS FIRM

Customer:	Kuehne+Nagel
Equipment:	Azanechiller
Refrigerant:	Ammonia / Glycol
Capacity	1560kW
Temperature	+2°C to +9°C

Global logistics specialist Kuehne+Nagel has invested in another environmentally efficient chill store cooling system from Star Refrigeration.

Kuehne+Nagel required a new refrigeration plant as part of an extension to a chilled storage facility at its Brinklow site, near Milton Keynes. The distribution centre handles food and drink logistics for one of the UK's leading supermarket chains.

Following the success of previous cooling projects at other UK sites, Kuehne+Nagel approached Star to design and build an environmentally conscious, robust and reliable refrigeration plant for the new chill store. Star worked in partnership with the main building contractor for the expansion project to deliver a turnkey cooling solution for Kuehne+Nagel.

A world leader in cooling and heating system innovation, Star designed and built a high efficiency refrigeration plant incorporating two of its

Azanechillers. The compact ammonia packaged chillers supply cooling to the new multi temperature chill store, with a 56,000sqft chamber for chilled goods and a 45,000sqft produce chamber for fresh fruit and vegetables. Each temperature controlled chamber has a throughput of around 30 tonnes per hour.

Star combined the new **Azanechiller** system with an existing refrigeration plant to give Kuehne + Nagel the flexibility to operate the two chambers within the new chill store at different temperatures. The existing plant allows the fresh produce chamber to operate at +9°C, with the new **Azanechiller** system enabling an operating temperature of +2°C in the chilled goods chamber.

Working to a strict time schedule, Star pre-commissioned and performance tested the **Azanechiller** system at its Glasgow manufacturing facility to reduce installation time on site at Brinklow. Group company Star M&E Solutions was awarded the role of mechanical and electrical contractor, including main low voltage panel works, lighting for the two chambers, fire alarm and alterations to the ventilation system.



Star's Azanechiller at Kuehne+Nagel, Brinklow

The Kuehne+Nagel system features two air-cooled **Azanechillers** with ammonia as primary and glycol as secondary refrigerant. Each unit has a cooling capacity of 400kW and features a low ammonia charge of less than 0.45kg/kW. The **Azanechillers** are located externally, mounted on concrete plinths adjacent to the existing plant room. As an environmentally conscious natural refrigerant with zero global warming and ozone depletion potential, ammonia overcomes concerns over HFCs. Waste heat from the **Azanechillers** is recovered for defrosting the evaporators in the new and existing refrigeration plant.



Azanechiller is a complete refrigeration package, ideally suited to temperature controlled storage as well as food processing, building services and process cooling. Only an electrical supply and flow/return pipework is required to provide cooling. This reduces site installation and commissioning time, whilst also avoiding the need for a plant room.

Suitable for cooling both water and glycol, **Azanechiller** was developed by Star for environmentally conscious end users. **Azanechiller** typically offers a 30% increase in performance compared with standard HFC chillers. Its packaged design and careful component selection result in an ultra low refrigerant charge, with all ammonia contained within the chiller and sited outside the warehouse or production facility.

Azanechiller features high quality, industrial components to offer unrivalled performance, reliability and low maintenance. Each unit includes two screw compressors, low noise drive motors,

STAR REFRIGERATION	STAR TECHNICAL SOLUTIONS	STAR M & E SOLUTIONS	STAR LEARNING SOLUTIONS	STARFROST FREEZING & CHILLING SYSTEMS
Thornliebank Ind Est Glasgow UK G46 8JW	Thornliebank Ind Est Glasgow UK G46 8JW	Wincanton Close Ascot Drive Derby DE24 8NB	Thornliebank Ind Est Glasgow UK G46 8JW	Craftsman's Way Lowestoft Suffolk NR32 3LQ
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Kuehne+Nagel

Star's low charge low pressure receiver and semi-welded PHE evaporator. Star's Telstar computerised control system ensures optimum performance, with HMI touch screen interface and optional broadband connection for offsite remote monitoring.

Azanechiller is available as an air-cooled or water-cooled unit with cooling capacity from 200kW to 850kW. Air-cooled **Azanechillers** feature high efficiency EC condenser fan technology. Water-cooled **Azanechillers** include a welded plate heat exchanger condenser to minimise refrigerant charge. Both include floating header pressure control, which optimises efficiency at part load conditions and low ambient temperatures.

For more information, contact Star Refrigeration on 0141 638 7916, email star@star-ref.co.uk or visit www.star-ref.co.uk

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