

Aqua

The Temperature
Control People.

Case Study | Chemical



**Free Cooling Chiller
Reaction For Chemical
Processor**

Client

Global chemical processor

Challenge

Production downtime due to variable temperature rise

Solution

Free cooling chiller based process cooling solution

Temperature control plays an important role when managing chemical reactions and the stability of chemical compounds. Aqua were approached by a global chemical processor to design & supply a cooling system for their product development division.

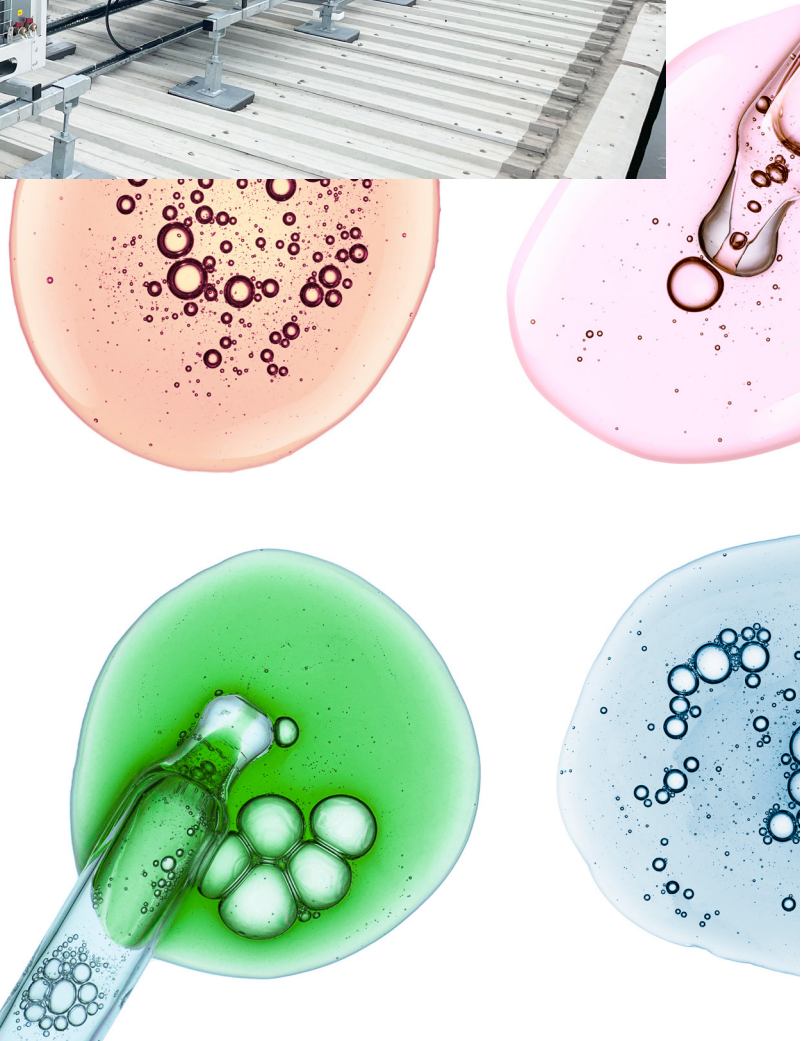


Situation

As a manufacturer of speciality chemicals, including silicone emulsions & compounds, our client was facing challenges with the development of a new product. The production process involved taking an aqueous emulsion and mixing it within a batch tank.

The mixing and moving causes an exothermic reaction, which releases heat and increases the temperature of the solution.

This temperature rise was proving problematic, slowing production, and creating unwanted downtime. On occasion, production was having to be stopped mid batch cycle, resulting in product and hours of production time being wasted.





Solution

Aqua designed, supplied & installed 3 x Aqua EcoPro chillers, configured on a run/run/standby basis. All units were installed on the roof of the production facility, optimising available space.

The system is designed so that, in normal operation, the three units work on a cycle, so their running hours are similar. They run on a part load basis, dissipating the unwanted heat together. If the heat load exceeds the capacity of a single chiller, a second will start, with the third available if needed.

The run/run/standby configuration gives the system built in redundancy. In the very unlikely event that a unit should fail, the control system will ensure another unit takes over. This leaves production running as planned, with no risk of downtime.

By installing Aqua EcoPro units, the system also benefits from fully integrated free cooling. Not only does free cooling dramatically cut energy consumption, it also substantially reduces operating costs and extends equipment lifetime.

Free cooling uses the natural air to cool, rather than the need for mechanical refrigeration. The outside ambient temperature dictates whether partial or full cooling is possible, but both have a significant impact on carbon footprint and energy usage. The Aqua EcoPro units also

operate on R454B, which has a low global warming potential (GWP) value and is a much more sustainable refrigerant than commonly used options like R410A.

Results

"My client has gone from having no process cooling, to having a state of the art, reliable system with built in redundancy. This gives them complete peace of mind, safeguarding their production strategy against delays and downtime" explains Will Coles, Aqua Area Sales Manager.

In addition, for 72% of the year, they'll benefit from a level of free cooling. The new system will really make a difference day to day, and they'll also make some impressive savings along the way!"



For support with your next process cooling requirement talk to the team
- 0333 004 4433.