

## Tricool provides cooling solution for essential oils processes

When Lionel Hitchen (Essential Oils Ltd) required a customised solution to control the cooling and heating processes in the manufacture of its concentrated essential oils, it looked no further than Tricool.



Chris Dimmick inspects the plant

Lionel Hitchen is a successful manufacturer of concentrated natural flavourings to the food, beverage, toiletries and cosmetic industries across the globe. Based in Hampshire, the company employs over 80 staff spread across two sites at Andover and Barton Stacey where the company has modern purpose-built manufacturing facilities.

The company is a specialist in extraction, concentration and distillation processes that involve high operating temperatures and precision cooling on demand. The company's flavourings and additives form key ingredients for a wide variety of food and drink produced by some of the biggest names in the retail business.

As the company expanded, Tricool Thermal has worked in close partnership to design temperature control solutions for each new process. To date Tricool Thermal has supplied six custom built chillers that includes the TEC, Trim and a Viceroy

temperature controller to meet Lionel Hitchen's own exacting criteria. All play an essential role in the many processes the raw materials undergo before ending up as pure concentrates.

### The Project

Hisplex 'Spices' are used by manufacturers committed to dry mixes. Oleoresins are extracted with solvent at ambient and undergo extraction process that draws out the concentrates (in the solvent) from the dried, ground natural plant materials. Distillate is produced by condensation when vapour passes through the condensers where the cooling water is reduced to 9°C by Compac 2000 and Trim 180 aircooled process chillers.

This concentrate is then distilled, enabling the solvent to be removed, reclaimed and used again. The distillation process requires an operating temperature of 70°C and uses Tricool Thermal Compac 2000 chillers to provide cooling at -3°C.

### Tricool Thermal's expertise

Because of the hazardous nature of the solvents many of the chillers are sited externally and Tricool Thermal ensured the units 18 Pharmaceutical cooling project Pharmaceutical cooling project used slow speed fans and acoustic housings to reduce noise levels to 55db (A) at 10 metres. In Building 'A' where the distillation of citrus oils takes place, the chilling requirements are not quite so onerous. The oils are distilled between 40°C-130°C then cooled using water from an underground water tank that is cooled by a Tricool Thermal chiller to 14°C. Mindful of the demands for energy efficiency and waste reduction, the waste heat is diverted to heat an adjacent building.



Fully weatherproof cooling package

A Viceroy thermoregulator is also used in an adjacent distillation plant to control the cooling water so that the product distillate of certain materials is maintained between 32°C-40°C to prevent crystallisation and



Internal localised controls for plant

product degradation.

“We have worked with Tricool Thermal for many years,” says Chris Dimmick, Engineering Manager at Lionel Hitchen, “They understand our requirements. The chillers are critical to each of our processes. It is very important that we can maintain low temperatures otherwise plant efficiencies and product quality are affected.”

Tricool Thermal has also supplied chillers at Lionel Hitchen’s plant in Mexico, where the design criteria required units to cope with a variable ambient ranging from 26°C-32°C.

Visit our website [www.tricool.com](http://www.tricool.com) for more information, or contact us on **0800 977 5709** or at [info@icstemp.com](mailto:info@icstemp.com).