

Case Stories

Chinese Edible Oil Refinery Plants Operate with Vahterus's Heat Exchangers

Tracy Hakala, Managing Director for China, Australia and New Zealand at Vahterus

China is famous for its wide variety of culinary options and flavours. An important element in Chinese cooking is the oil in which the dishes are prepared. With 1.38 billion people's appetites to satisfy, China is one of the biggest edible-oil refinery centres in the world. In the Tianjin area alone, 4,600 tons of soya beans are processed each day.

The process in an edible-oil refinery includes four main steps: degumming, neutralisation, bleaching and deodorisation. Edible oil deodorisation is carried out on an industrial scale using different methods (continuous, semi-continuous or batchwise) with the process requiring the vegetable oil to be heated to approximately 230°C.



Vahterus PSHEs operating at a global leading edible oil producer in Shenzhen, China.

Commonly, the oil resulting from the deodorisation process is used to preheat the incoming oil for odour removal, thus requiring a heat exchanger to economise the process. In this application, due to high operating temperatures, gasketed or brazed-type plate heat exchangers are not suitable due to their temperature limitations. Gasket replacement and oil leakage can lead to loss of production and revenue, which can amount to millions of RMB per day. In addition, oil spillage into the operating environment raises environmental and safety concerns.

Vahterus's PSHE is highly suitable for use in the edible-oil deodorisation process. The PSHE has the advantage of combining the high-heat transfer efficiency of a plate-type heat exchanger with a fully welded construction, which eliminates the use of gaskets. This provides a much more robust and durable solution, all contained within a pressure vessel.

Through close cooperation with our partner, Oiltek Oil & Fats Engineering (Shenzhen) Co, Ltd, Vahterus's fully welded PSHEs have helped the leading edible oil-refinery plants improve their energy and operational efficiency. Today, in the main edible oil production bases in Tianjin, Shanghai and Dongguan, Vahterus PSHEs are running safely and reliably 24/7.