



SEPARATION TECHNOLOGY FOR EDIBLE OIL REFINING

Chemical and physical refining

Oils and fats processing: Robust. Reliable. Efficient.

Vegetable oil is one of the most important primary foods and therefore requires maximum quality. The quality of the final product depends on the refining method and the nature of the crude oil. GEA offers a wide range of centrifuges designed to boost value in this respect, ranging from a separator with a daily capacity of 10 tonnes for operators of small oil mills right through to separators with capacities of more than 1600 tonnes per day for large refineries.



The practical production processes and technologies must be as varied as the different types of oil. GEA therefore designs and manufactures a "customized" solution which is tailored to meet the requirements of the specific application.

The centrifuge is always to be found at the heart of the installation. Whether a self-cleaning separator with a maximum level of automation or a discontinuously operating system, every customer is able to find the best setup in economic and technological terms for his specific production tasks. We do not only supply the mechanical separation facility; we of course also supply all other components and systems necessary for an efficient and reliable production line. Satisfied customers throughout the world have placed their trust in this know-how and technological potential, developed together with the customers in the course of demanding day-to-day operations.

Processing of e.g.

- Soybean oil
- Rapeseed oil
- Sunflower oil
- Animal fat
- Cottonseed oil
- Corn oil
- Fish oil

Our core competence in edible oil refining

- Press oil clarification
- Degumming
- Neutralization
- Dewaxing
- Soapstock splitting

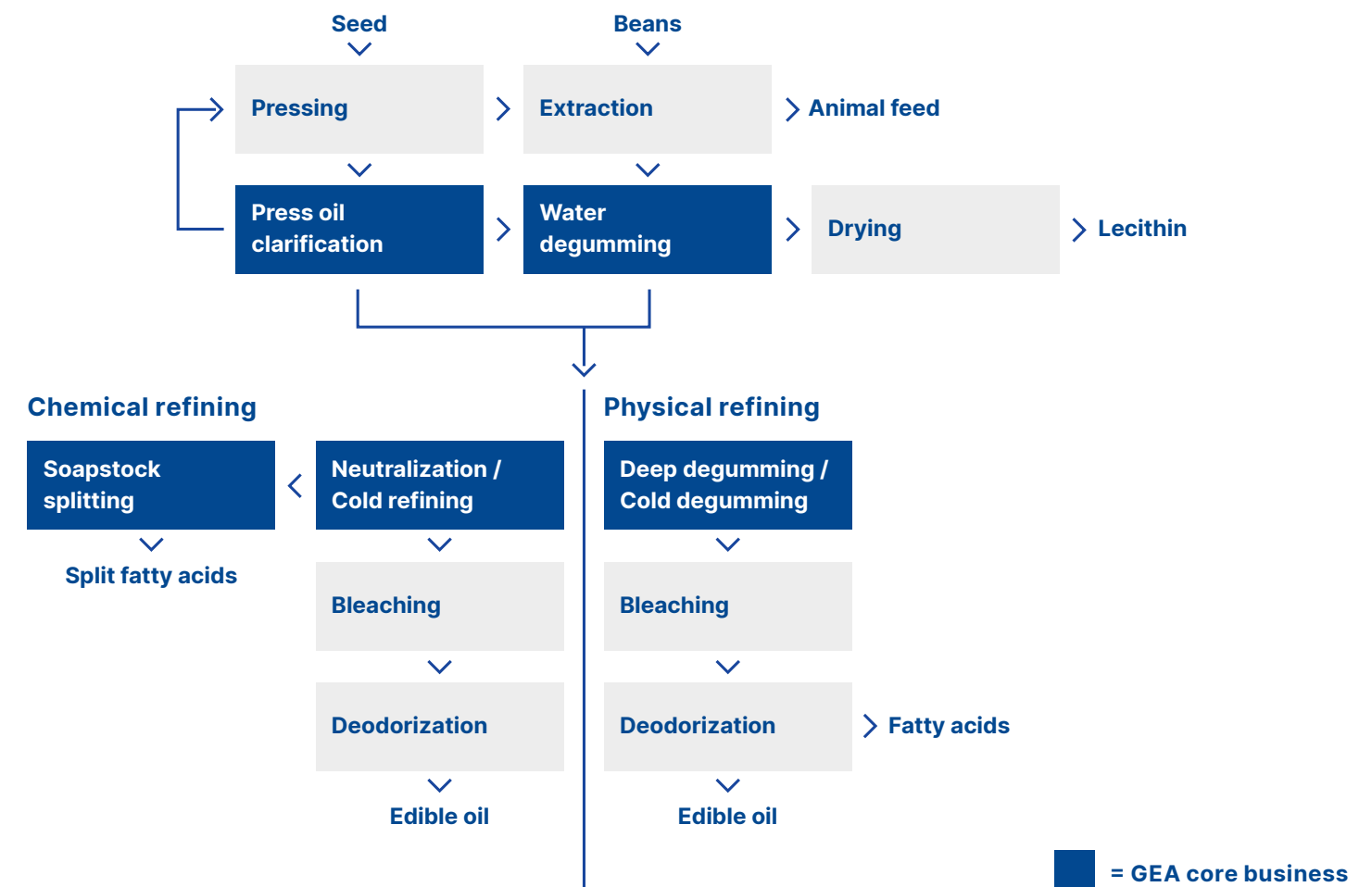
Special applications

- Lecithin de-oiling
- Bleaching earth de-oiling
- Re-refining of used frying fats

Our core competence in oleochemical applications

- Transesterification (e.g. for making biodiesel)
- Epoxidized oils
- Mono-/diglycerides
- Fatty acids
- Glycerine
- Soap
- Fatty alcohols

Chemical and physical refining: Different processes. One contact.



Two processes have been developed for refining edible oils and fats; the decision as to which process is to be used depends on the types and qualities of crude oil to be processed.

Chemical refining is the traditional method, where the free fatty acids of the crude oils are neutralized with caustic soda. The created sodium soaps are separated by means of centrifugal separators. The neutral oils are subsequently bleached and deodorized. This method can be used for reliably refining virtually all crude oils, including oils of low quality, with the exception of castor oil.

In the alternative method of physical refining, the free fatty acids are removed by distillation in one stage during deodorizing.

A fundamental criterion for using this method is that the crude oils should be degummed as effectively as possible; however, this is only possible to a limited extent with some crude oil qualities. Other oils, for instance cottonseed oil or fish oil, are fundamentally not suitable for physical refining. GEA is able to supply suitable process lines for both processes.

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