Refined fish oil processing

The composition of fatty acids in fish oil is quite special compared with vegetable oils. Fish oil contains a large amount of polyunsaturated fatty acids, especially the content of EPA and DHA (eicosapentaenoic acid and docosahexaenoic acid) which are unique in fish oil. From 18.8% to 33%, it is easily oxidized. In addition, fish oils contain colloidal substances that are completely different from the colloidal properties of vegetable oils. These are two important issues that must be noted in fish oil refining. Since fish oil is mainly used as an energy feed for animals in the feed industry and an important source of essential fatty acids in aquatic animals, and its application in human health care products is not very large, only the production of fish oil for feed is used here. The process is discussed.

Refined fish oil processing flow chart simple description:
(1) Raw material acceptance: Each batch of raw fish oil comes from a manufacturer with production qualifications, raw material purchasers and company laboratories to test the sensory and physical and chemical indicators, and can only be accepted after passing the qualification; each batch of raw materials can be clearly identified, sub-region Stacking.
(2) Hair oil pretreatment: including acid removal, degumming, dehydration, decolorization and deodorization.
(3) Esterification: The crude fish oil, anhydrous ethanol and sodium hydroxide of the catalyst are introduced into the esterification kettle in proportion, and after the heating, the esterification reaction is carried out, and the reaction is completed, so that an appropriate amount of water can be added for the layering. The upper liquid is ethyl ester fish oil and ethanol, and the lower liquid is a mixture of glycerin and fish oil ethyl ester.
(4) De-ethanolization: After the esterification is completed, excess ethanol is distilled off, and passed through a condenser to be condensed and recovered.
(5) Decolorization: The upper layer of fish oil ethyl ester was poured into a decolorizing kettle to remove water under a vacuum condition, and then an appropriate amount of white clay was added, and decolorization was carried out by decolorization of white clay.
(6) Molecular distillation: Molecular distillation mainly separates ethyl ester fish oil by molecular weight. Under high vacuum conditions, each group of molecules evaporates at a temperature running at its boiling point. Since the average molecular free radicals of different groups of molecules are different, At the same temperature and pressure, the free radical free path is small, and the light molecule free path is large, so that the heavy phase and the light phase in the material are separated.
(7) Urea saturation and separation: Mix a certain proportion of ethyl ester fish oil, 95% ethanol and urea, and absorb the saturated fatty acid ethyl ester in fish oil by using urea to adsorb the saturated ethyl ester fish oil dissolved in ethanol. Into the urea, and then separated. The separated materials were: urea containing saturated ethyl ester fish oil, 95% ethanol containing polyunsaturated ethyl ester fish oil. The oily ethanol is subjected to vacuum separation of the film, and the separated ethyl ester fish oil is further subjected to molecular distillation.
(8) Winter filtration: After the urea is saturated, the ethyl ester fish oil is transferred into the crystallizer. The saturated fatty acids of the macromolecules are crystallized into a solid state at a low temperature, and are removed by filtration to obtain various ratios of ethyl ester fish oil. (9) Exquisite filtration: The crystallized fish oil is mixed with a certain proportion of activated carbon,

and the adsorption and decolorization of heavy metals by activated carbon are refined.
(10) Mixing: Mixing the requirements of different ratios of EPA and DHA in ethyl ester fish oil, the total content of EPA and DHA is generally from 35% to 80%, and the ratio is according to different requirements of users.
(11) Deodorization: After the pre-treatment of the fish oil semi-finished product is heated to a suitable temperature in the deodorization tank, a certain pressure of superheated steam is introduced and kept for a certain period of time to allow the steam to remove the astringent component of the fish oil.

The modern processing technology of marine fish oil refining has gradually matured. The marine fish oil refining technology has continuously improved the traditional fish oil refining processing technology with some processing techniques of advanced foreign companies and combined with actual processing conditions. In particular, the pretreatment process of the squid oil improves the quality of the finished fish oil product; the fish oil refining technology does more work on the pretreatment, and it will have a good result in product quality.
Leader Edible Oil Refining Processes' continuous deodorization system processing technology makes refined fish oil more "smellless and tasteless", and the high-end application of fish oil to the modern processing technology of fish oil will revolutionize the entire fish oil processing industry chain. To make the industrial development of marine fish oil possible, Leader Edible Oil Refining Processes researches and innovates the processing technology of marine fish oil refining, and continuously solves the new problems of marine fish refining. Leader Edible Oil Refining Processes is making marine fish oil as a marine economy and offshore fish oil equipment.