

REFINING AND PROCESSING PLANTS FOR FAT AND OILS



Refining and processing plants for fats and oils are facilities that transform crude oils and fats into high-quality finished products that are suitable for use in food, industrial, and other applications. The refining and processing of fats and oils typically involves a series of physical and chemical processes to remove impurities and enhance the quality of the final product.

PROCESSING

- 1. Degumming:** This process removes phospholipids, gums, and other impurities from crude oil using water or an acid solution.
- 2. Neutralization:** This process removes free fatty acids from the oil by adding an alkali solution, such as sodium hydroxide or sodium carbonate.
- 3. Bleaching:** This process removes pigments, such as chlorophyll and carotenoids, from the oil using an adsorbent, such as activated carbon or bleaching clay.
- 4. Deodorization:** This process removes odors and flavors from the oil using steam distillation or vacuum stripping.
- 5. Hydrogenation:** This process adds hydrogen to unsaturated fats and oils to increase their stability and shelf life. This is commonly used in the production of margarine, shortening, and other food products.
- 6. Fractionation:** This process separates fats and oils into different fractions based on their melting points. This is used to produce speciality fats and oils with specific properties for different applications.
- 7. Packaging and storage:** Refined and processed fats and oils are packaged in various forms, such as bottles, drums, or tanks, and stored in temperature-controlled environments to ensure their quality and stability.

FOOD PRODUCTS

1. Cooking oils:

Vegetable oils such as soybean, canola, sunflower, and palm oil are commonly refined and processed for use as cooking oils.

2. Margarine and shortening:

Refining and processing plants are used to produce margarine and shortening, which are used as substitutes for butter in baking and cooking.

3. Confectionery fats:

Specialty fats are produced using fractionation and hydrogenation processes and are used in the production of confectionery products such as chocolate and candy.

4. Dairy products:

Milkfat, such as butter oil and anhydrous milkfat, are refined and processed for use in dairy products such as cheese, ice cream, and yogurt.

5. Bakery products:

Fats and oils are used in the production of baked goods such as bread, pastries, and cakes.

6. Snack foods:

Fats and oils are used in the production of snack foods such as potato chips, crackers, and popcorn.

7. Infant formula:

Vegetable oils are often used as a source of fat in infant formula.

- The working principle of refining and processing plants for fats and oils is to remove impurities and improve the quality of the crude oil or fat, transforming it into a high-quality finished product suitable for use in food, industrial, and other applications.

MARKET SCOPE

- According to a report by Research and Markets, the global market for fats and oils is expected to reach \$247.8 billion by 2027, growing at a CAGR of 3.6% from 2020 to 2027.
- Major players operating in the industry are, **Cargill**, **Wilmar International**, **Archer Daniels Midland (ADM)**, **Bunge Limited**, and **IOI Corporation**. These companies offer a wide range of refining and processing technologies, including physical refining, chemical refining, enzymatic refining, and fractionation.
- The Asia-Pacific region is the largest market for refining and processing plants, driven by the growing demand for vegetable oils and other fats in the food industry. China and India are the two largest markets in the region, with high demand for cooking oils, margarine, and other food products.
- In addition to the food industry, the market for refining and processing plants is also driven by the growing demand for biofuels and other industrial applications.
- Vegetable oils and animal fats are increasingly being used as feedstocks for biodiesel production, while other specialty fats and oils are used in cosmetics, personal care products, and other industrial applications.

