

FAT HARDENING AND HYDROGENISING PLANTS



Fat hardening and hydrogenation plants are industrial facilities that are used to modify the chemical composition of fats and oils, primarily for use in food production. These processes involve the addition of hydrogen gas to unsaturated fatty acids, which results in the conversion of these acids into saturated fats.

- **Fat hardening plant:** Uses a process called partial hydrogenation, which involves the addition of hydrogen gas to unsaturated fats at high temperatures and pressure.
- **Hydrogenation plant:** Uses a process called full hydrogenation, which involves the complete saturation of unsaturated fatty acids with hydrogen gas.
- The raw materials for fat hardening and hydrogenation plants are typically edible oils, such as soybean oil, cottonseed oil, palm oil, or canola oil, which are sourced from agricultural producers.



Uses

1. Reactors

Made of stainless steel and are designed to withstand high temperatures and pressure.

2. Catalyst systems

Used to initiate and control the hydrogenation reaction.

3. Heat exchangers

Used to control the temperature of the reaction mixture and to recover heat from the process streams.

4. Distillation columns

Used to separate the desired products from the reaction mixture.

5. Filters

Used to remove any solid impurities that may be present in the starting materials or reaction mixture.

6. Storage tanks

Used to store the finished products before they are packaged and shipped.