THIN FILM EVAPORATOR

Thin-film evaporation, or heat-sensitive liquid with high viscosity of solutions of the solvent, a thin liquid film is created by mechanical means, along the heat transfer is based on the principle of carrying out the removal.

Thin Film Evaporators, difficult separation of the substances to successfully perform evaporation. To put it simply, without direct contact with the product held and fed a heat transfer volatile component of the product by mechanical mixing of the less volatile compound separates quickly. Heating the contact surface and the short duration of the high velocity fluid motion, the heat sensitive thin film evaporator, a very viscous material allows for successful evaporation.

Thin Film Evaporator, heating jacket, including a housing and a rotor consisting of two main parts oluşmaktadır. A Film Evaporators are the vertical design of the most widely used today.

Vertical designed thin film evaporator feed liquor evaporator body, the heated surface from the top tangentially enters the rotor through the evaporator body towards the inner wall yayılır. The blade movements caused by waves of high turbulent flow and optimum heat flux while inducing thin liquid film spiral Moving / helix drawing evaporator flows downwards from the inner wall.

During this time the volatile components rapidly evaporated olur. The liquid flow in the opposite direction movement is whether evaporator overhead when left to condense or next process equipment to enter the solution. The film system in the industry mostly waste oil recycling system kullanılmaktadır. The film through a system available on the market, waste oils 100% purified cleaned and ready to be used into fat getirilmektedir. remaining waste material dross on the market even searched and can be sold.

WASTE OIL LOSS ON NATURE

* Waste oil has ecotoxicity property; pollute the environment, damage to living organisms in the environment.
* Waste water pollution by 25% source, used waste oils oluşturur. not waste water in the waste oils, sea, lakes and rivers when it is poured that water pollution and water oxygen reduction as a result of the ambient live on the massive destruction leads to.
* Waste oils, are resistant to anaerobic degradation.
* Found in the mud, they may cause excessive foaming in digesters, can clog the pores of the filter and the use of sludge as fertilizer on land disrupt.
* Industrial waste oil water contact with water, the soil in contact with the ground, in the air when burned and destroyed is significantly contaminated, nature and living things are found in a significant impact on quality of life.

BENEFITS OF WASTE OIL RECYCLING

* More clean and healthy environment, nature will have.
* In nature, living things will have life more comfortable and healthy.
* Energy savings would be concerned.
* Waste oil collection, processing will create new jobs and businesses.
* The film cleared from the remainder of the oil waste slag will be a source of raw materials for sub-industry.
* Will be available through recycling market will reduce the cost of clean oil.
INNOVATIVE AND ECONOMIC ASPECTS OF THIN FILM SYSTEM

1. Classic all chemicals in the evaporator burner heated to 400 °C at 380- evaporated, condensed made production, the temperature is higher and longer consists of unwanted chemicals, the product quality is reduced. In film evaporator, chemical, thermal oil heated to 280 - 3000°C in the jacket is by contacting suddenly evaporated and condensed in heat exchanger. Here the full temperature control will be evaporation under vacuum lower siccalk and less time is done on time decreases, yield 4-5 fold increase, decay not, the homogeny that is provided, the quality increases, energy, business, and labor costs marked improvement are provided.

2. Film evaporator according to conventional reactor is 4-5 times faster and more efficiently,

3. Due to work in a vacuum and low temperature combustion products (cracking) the lack of homogenization, purity and quality increase, due to the reduction of waste is odorless,

4. After distilled product comes out, the product is mixed with other substances due to high temperature when leaving exchanger passed through to cause oxidation of the product still remaining part, as a result of blackening occurring in the new system is not formed;

5. Classic due to high temperature during evaporation in the reactor off-gas to dispose of the product as a result of environmental pollution, it is not formed in the film evaporators;

6. All levels as high as 10 tons of the material by heating at high temperatures such as 400 °C are at high risk of explosion when the explosion in the new system as 70litre/dak amounts and for reasons of low temperature is very low risk of explosion;

7. Automation and labor necessary to scrape the surface of the remaining ingredients to save, to ensure safety of employees at work.

WASTE OIL RECYCLING SYSTEM THE ROLE OF THE FILM

Which occur in industry or sea disposal of waste oils in nature with large fines are trying to prevent. So the waste produced at the factory operators are obliged to destroy fat. Operators are therefore paying high fees to various organizations feel no burning of waste oil. However, because this system does not look too sweet burned oil pollute the air with gas is released into the environment. Both applications are a high cost. The system that we manufacture the film is removed and the waste oil is cleaned ce purified ready for use 100 % converted into fat. If the waste slag remaining after cleaning by sub-industry is expected to forward. So we made the system both in terms of cost as well as for the environment is a system that is extremely helpful.

Economic Aspects:

While vary according to the product of 1-1.5 tons / hour will be able to produce a thin- film evaporator 16m2 turnkey plant is around 1 million USD. Working with the classical method of a plant of the same capacity, but the operating cost is slightly less than the cost of energy, labor, and the resulting product quality. Given the importance of the new thin-film evaporator system emerges. European thin film as in the present method would be required within 2 years conversion or regeneration of the reactor will be required. Classic occurring in evaporators will completely eliminate negativity, better quality and less energy, less operating and labor costs, fully automatic PLC controlled machine design and production will be achieved. According to conventional evaporators 400% increase in production capacity and 75% less energy is being provided.

National Recovery: According to our survey years, approximately 15 film evaporator to our country are imported. Our company realized this after the film evaporators prevent foreign output and it also plans to export to the world market by staying. Currency exchange, as will be denied entry at the output gain can only be achieved by ensuring national. Our company currently produces primarily of technological equipment to Ukraine and other European countries have accumulated in the sale and the sale of these evaporators is about making a sufficient condition.

Energy Costs:

The same size of a conventional evaporator and a thin film evaporator, and the costs of energy consumption if viewed in both power consumption 7.5 kW / h is around. However, when viewed at the same power production from sarfêderên Classic evaporator 500 kg / hr (1,460 ton per year) of the product, whereas, in the film evaporators 2000 kg / hr (5840 tons per year), i.e. 4 layers of product are obtained. The amount of energy consumption per unit of product 1/ 4 E is in , is saving 75%.

LABOR COSTS:

Film evaporators just a worker standing at the beginning of the PLC system will control the production. Classic in the operation of evaporators are required to work at least two workers. 1 worker will be saved. Be provided in the system which will be developed and the upper portion of evacuating when receiving product from the lower part of the waste will be taken. The evaporator will be needed for it to temizlenmesi savings in labor costs in this matter is sağlacana. For different products thin film evaporator design and build capability will save this project knowledge will increase, systematic R & D capacity to make and opportunities to increase export opportunities and import substitution will provide national and international competitiveness will increase. As more and cheaper production efficiency and quality improvement can be made, you will be able to drop the cost, doing business opportunities will arise to a large extent, the company will be making a direct contribution to the economy of our country as well.

We produce this system turnkey.