System for collecting used cooking oil and manufacturing bio-fuel

Bio-fuel Manufacturing System and Related Equipment

Features

- When sized to manufacture 30 kiloliters per day, this system can reduce annual fossil fuel consumption by about 10,000 kiloliters and annual CO_2 emissions by about 30,000 tons.
- The system can be scaled to accommodate capacities ranging from 200 liters to 30,000 liters per day, and glycerin, a secondary waste product, can be refined in an evaporator to produce a commercially viable product.

Overview (Technical principles, actions, etc.)

①Mobile collection and transport system

Equipped with an engine-powered pump, this transport system allows collected oil to be loaded and unloaded from a truck bed with a forklift or other loading equipment.

Mobile collection and transport system

Collection and transport of oil

②Continuous biodiesel fuel manufacturing system (10,000 to 30,000 liters per 24-hour period)

This system uses a continuous two-stage alkali reaction process that consists of some 20 different pieces of equipment that perform steps including stirring, reactions, separation, washing, and refining.

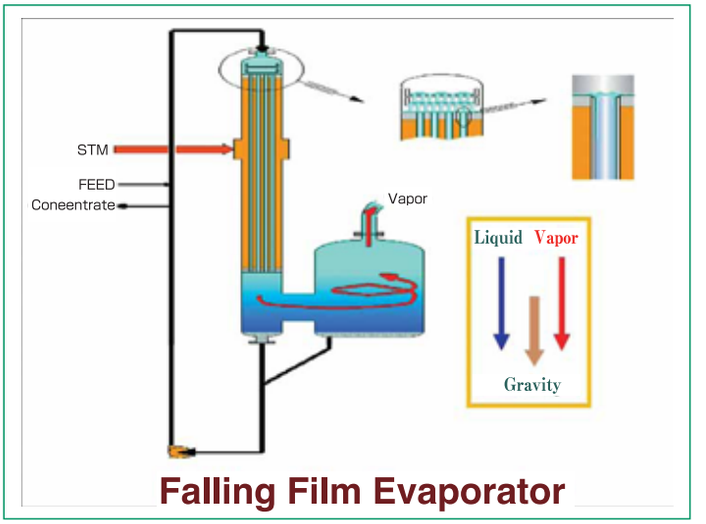
③Biodiesel fuel manufacturing system (200 to 2,000 liters per batch)

Hamada Kagaku can propose solutions using alkali, fermentation, and other processes optimized for a project's particular external environment and operating conditions.

④Evaporator

Refined glycerin is extracted from secondary waste products using an evaporation process. Hamada Kagaku can also supply evaporative refining systems to improve BDF quality.

Biodiesel fuel manufacturing system



Principles of evaporator operation

Introductory Track Record

■ Mobile collection and transport systems

Seventeen systems are currently operational in Japan.

■ Continuous biodiesel fuel manufacturing systems

Japan's highest-quality, largest-capacity system is currently operational at Toyama BDF (12,000 liters per 24-hour period).

■ Batch biodiesel fuel manufacturing systems (200 to 2,000 liters per batch)

Four systems are currently operational in Japan.

Effects

Hamada Kagaku offers consulting services to help customers resolve issues related to the biodiesel fuel business in Asia.

◎Mobile collection and transport systems

Use of a system that efficiently collects and transports used oil from sources such as restaurants, hotels, and supermarkets eliminates the need for facilities to unload and extract oil.

◎Continuous biodiesel fuel manufacturing systems

These systems occupy a small footprint but can manufacture large volumes of high-quality biodiesel fuel.

◎Batch biodiesel fuel manufacturing systems

These systems cut costs and reduce CO_2 emissions by converting used cooking oil into fuel on-site at locations such as food processing plants.

◎Evaporator

Evaporator systems can reduce manufacturing costs by extracting refined glycerin from secondary waste products.

Applicable field
Food product plants, supermarkets, hotels
Bio-fuel manufacturing system

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