

USP Grade Glycerine from Biodiesel Crude Via High Vacuum Distillation in Pfaudler Wiped Film Evaporators (WFEs) Data Sheet DS39-501-0

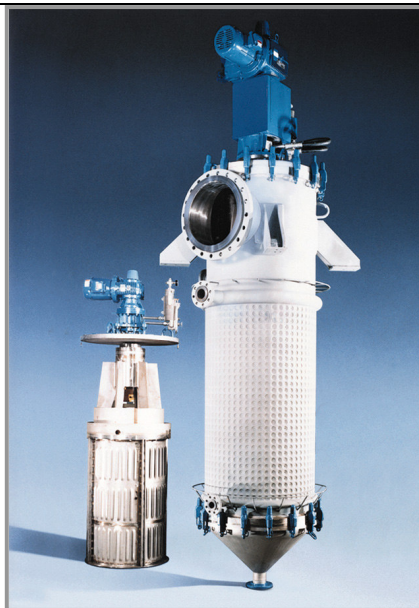
Introduction

The worldwide use of Biodiesel (methyl ester) as an alternative fuel is growing at an estimate rate of ~30% per year and is projected to reach ~3Bn gallons per year (gpy) in 2010. This is primarily due to the rapid increase in the price of oil, government subsidies and mandates, new government pollution restrictions and an abundance of available renewable raw feed materials.

Crude Glycerine is a by-product of biodiesel production. The crude glycerine can contain methanol, water, unreacted catalyst, various salts, ash, MONG (matter organic not glycerine), metal soaps and other compounds depending on the process. Typically the crude glycerine is very low value but may be further purified to produce high value USP Grade Glycerine via high vacuum distillation.

The Process

Converting the crude glycerine to USP Grade Glycerine is a multi-step process. The methanol and water are distilled. The methanol may be recycled. The glycerine is distilled under vacuum utilizing a Pfaudler Wiped Film Evaporator. Depending on the quality of the feed, additional steps may be required.



Why Use Vacuum Distillation?

Glycerine is heat sensitive and in order to produce a high quality product it is necessary to reduce the glycerines exposure to heat. The reduction of pressure in the vessel reduces the boiling point and thus the WFE doesn't need to be as hot as it would otherwise. Also, Pfaudler wiped film evaporators have an internal condenser, and thus a very short path distillation, meaning the glycerine is only at an elevated temperature for a matter of second.

Additionally, WFEs are perfect for this application because the bottoms are extremely viscous and WFEs can handle viscosities of up to 20,000 cP or 200,000 cP in a specially designed high viscosity unit.

Why Pfaudler WFEs?

Experience: Pfaudler has been manufacturing WFEs and the Pfaudler Engineered Systems Group has been providing vacuum distillation systems since the 1950s.

Sole Source Responsibility:

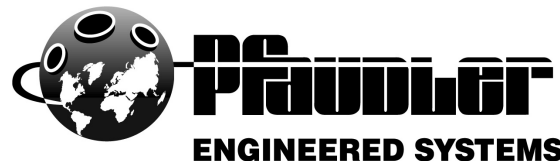
Our complete modular system can be installed at your plant and minimize any disruption to production.

Fixed Price: Minimize the chance of project cost overruns with a fixed price contract and minimal field installation costs.

Process Guarantee: Based on our extensive experience in processing biodiesel and test results from a test on your biodiesel in our Test Facility, Pfaudler will guarantee the system through-put and product quality.

Support and Service: Pfaudler has been in business since 1884. Our process engineers and regional servicemen are close by and available to troubleshoot or service your system. Spare parts are stocked in Rochester, NY and available for immediate delivery.

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