Why Choose SRS Engineering?

At SRS Engineering quality, safety, and reliability are keys to our success. Count on SRS to provide:

**Experience:** Over 25 years process technology experience with 60+ Engineers on staff (Electrical, Process, Application, Project, Mechanical, Chemical, Civil, Structural, and Controls)

**Trust:** As an International provider with an established customer-base, SRS is a true Engineering OEM (Original Equipment Manufacturer) capable of delivering site & feedstock-specific solutions to all their clients.

**Advanced Technology:** SRS Engineering has the most advanced biodiesel technology available with state-of-the art plant control systems as well as:
- High FFA pretreatment systems
- High efficiency reactors
- High purity methanol recovery systems

**Cost Effectiveness:** Lowest operating costs in the industry
- Lowest energy consumption
- Plant automation results in minimal staff requirements
- Highest efficiency methanol recovery available

**Plant Automation:** Provides added safety, reliability and predictability
- Less manual adjustments made, thus less human error
- Less plant downtime
- Entire operation integrated into a single management system
- Automation incorporates all process technology equipment
- Safety engineered (tag alarms, I.S. wiring, nitrogen utilization, and more)
- Integrates with over 30 different DCS systems
- Monitored and operated from anywhere via an Internet connection

**Environmental Responsibility:** SRS is committed to the environment. Our dedication to a clean environment, alternative fuel and economic independence drives us to help companies build biodiesel plants with optimal efficiency.
Turnkey Biodiesel Refinery

10 Steps to Success

SRS Engineering understands the steps required to build and maintain a biodiesel plant. From site selection and permitting to producing ASTM/EN grade fuel, SRS has the capability and the facilities to complete every aspect of your biodiesel plant construction. We have the staffing and resources to assist you with:

- Plant size determination
- Selecting an appropriate site
- Permitting
- Biodiesel plant engineering
- Determining your biodiesel equipment needs
- Plant installation
- ASTM/EN quality and BQ-9000 considerations
- Plant start up and training
- Plant management
- Planning for the future

SRS Biodiesel can help you with any and all of these steps in order to assist you in building a profitable biodiesel production facility.
SRS Engineering offers first aid to the challenged and incomplete biodiesel plant.

Is your biodiesel plant experiencing any of the following symptoms?

- **Inactive** due to being incomplete or lacking other essential equipment
- **Sluggish** and does not meet expected process rates
- **Not economical** with excessive consumable material consumption or lacking sufficient recycling components
- **Limited to a particular feedstock** and not able to use high FFA feedstock
- **Excessive product yield loss** as a result of using high FFA feedstock
- **Lacking in quality** and not meeting specifications
- **Labor intensive** due to lack of automation
- **Lacking in proper operations or maintenance training**

SRS Engineering Biodiesel doesn’t just handle new up-and-coming biodiesel refineries, we also specialize in offering all levels of assistance to existing biodiesel plants. Many of our clients in fact have come to SRS as a result of their dissatisfaction with their existing biodiesel technology. Our team of biodiesel specialists are fully equipped to help you diagnose your current plant’s problems while making appropriate recommendations to cure them. SRS’ trained team of biodiesel professionals provide a high level of expertise to assist challenged biodiesel plants to become functioning and profitable once again.
Biodiesel Continuous “Waterless” Reactor

SRS Engineering Corporation’s continuous flow “waterless” transesterification system is the most effective biodiesel reactor on the market. Capable of using feedstock containing up to 4.5% FFA, SRS’ BCP-Series model provides a complete reaction to esterify the FFA into methyl esters while preventing soap formation and leaving behind only small trace amounts of water.

The BCP-Series model is designed to accommodate all feedstocks with FFA as high as 4.5% and water at 400 PPM. Because not all feedstocks will meet this requirement, SRS incorporates the FSP-Series pretreatment unit to ensure that all feedstocks are pretreated in the most economical way prior to the BCP transesterification system. This applies to animal-fat based feedstocks such as beef tallow or chicken fats, as well as the new emerging feedstocks such as algae oil, palm, or jatropha.

The BCP-Series System is a “waterless” continuous flow transesterification system with a number of key benefits:

- Delivered as a self-contained modular skid
- Extremely space-efficient unit
- Single-point connections for all feeds and utilities
- Very few moving parts, resulting in less mechanical problems
- Utilization of proprietary nano-cavitation technology in conjunction with special dosing methodologies
- Prevents soap formation
- Scalable to 500k-150 MMGY
- Highly energy efficient - using up to 80-90% LESS energy than most reactors

Meets UL, CSA and IEC standards and complies with OSHA regulations
Feedstock Pretreatment / High FFA Pretreatment

In today’s market having your plant be multi-feedstock capable is not only a competitive advantage – it’s a business necessity. If you have a plant designed to use only refined oils, adding high FFA pretreatment opens up a world of new feedstock opportunities. Whether it be animal-fat based feedstocks such as beef tallow or chicken fats, or one of the new emerging feedstocks such as algae oil or jatropha, they all share one thing in common, they all have FFA too high for base transesterification and thus require pretreatment. SRS offers a scalable, continuous-flow, skid-mounted system that can front-end any existing biodiesel system, efficiently converting FFA into useable oil with no yield loss.

SRS Engineering designed the FSP-Series acid esterification pretreatment system to enable new and existing plants the ability to incorporate multiple high-FFA feedstocks.

The FSP-Series system is a continuous flow acid esterification system with a number of key benefits including:

- Delivered as a skid-mounted, space-efficient unit
- Single point connections for all feeds and utilities
- Utilizes heat, pressure, static mixing, and special dosing methodologies
- Scalable with flow rates from 500,000 to 150 million gallons

Key advantages of the FSP-Series Pretreatment System

- No yield loss
- Prevents soap formation
- Scalable to 15% FFA or higher, sized from 500k-150 MMGY
- Energy efficient
- Quick return on investment
- Mitigates risk for high-FFA feedstock environment

Feedstock pretreatment/acid esterification are as important as transesterification and without it biodiesel plants will operate with little to no profits.
Biodiesel Methanol Recovery

SRS Biodiesel’s high-purity methanol recovery system has the solution for recovering your unused methanol. This unique unit is unlike first-generation vacuum based systems that suffered from low recovery rates, water contamination, glycerin, biodiesel carry-over in the recovered methanol, and high energy usage. SRS’s true fractional distillation columns efficiently recover >99.9% of all unused methanol, returning it clean and dry to your bulk methanol tank at a >99.9% purity rate. This results in no wet methanol and no off-site reprocessing costs. In fact, your recovered methanol is often of a higher purity than the new methanol you purchase.

The SRXC-Series
Removes methanol from the glycerin stream

• >99.9% purity range
• Typical purity of crude glycerin is 80-85%
• Reduces glycerin stream to <0.05% methanol (non-hazardous)
• Automatic self-adjusting control system for variable parameters
• Modularized skid for easy installation
• Continuous operation
• Pre-wired, pre-piped and tested prior to delivery at customer site

ASV-Series (Biodiesel Dryer)
Recovers excess methanol allowing for cleaner unwashed fuel

• Methanol is directed to storage tank for high purity column processing
• Reduces typical wash times associated with dry/wet washing
• Reduces dry wash consumables and/or longer wear life of ion materials