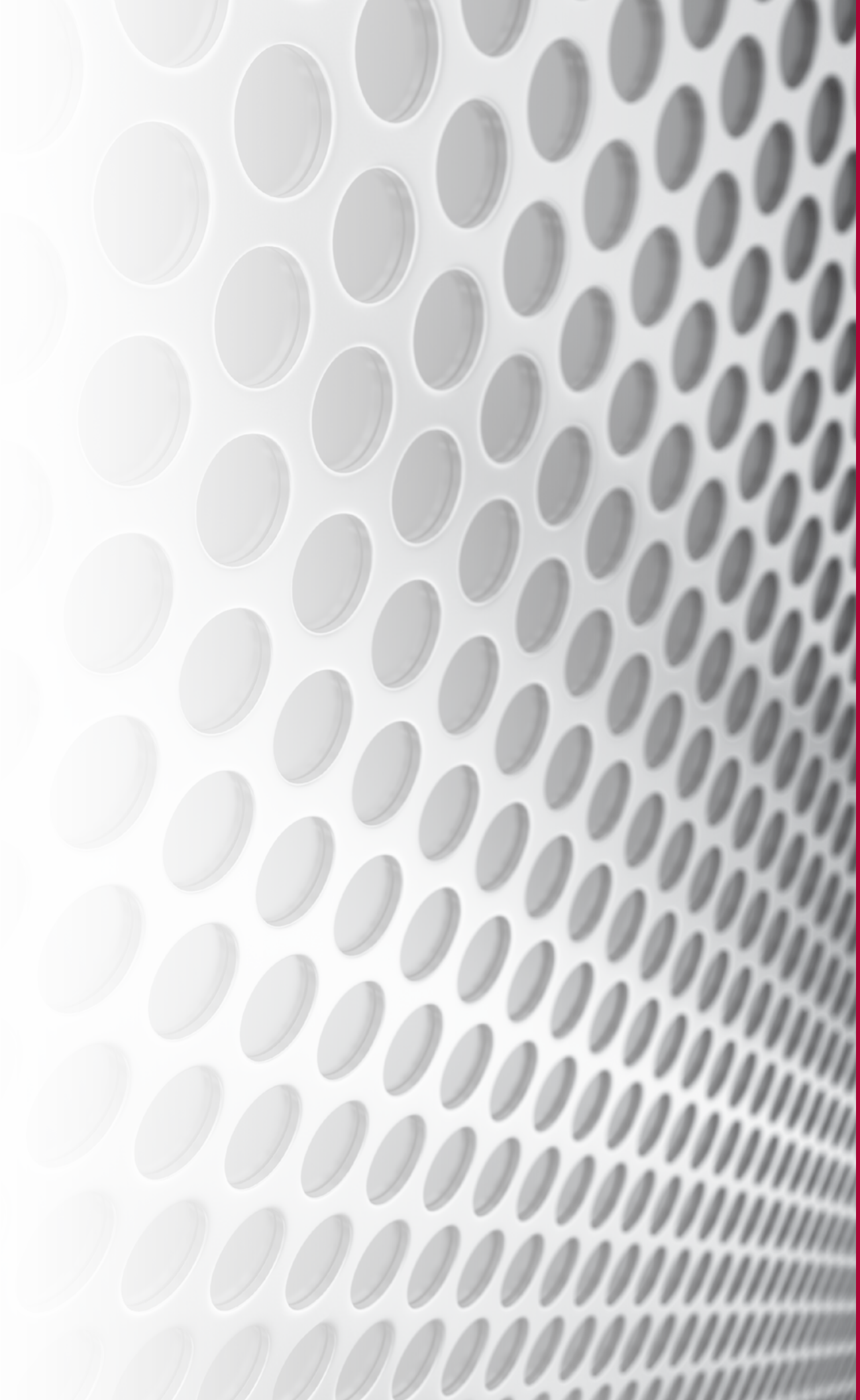


Section 4:

BIODIESEL PURIFICATION



Biodiesel Fuel Purification

Schroeder Fuel Filtration

For more than 60 years, Schroeder design engineers have encountered many types of fluid systems. We are proud of our continuing success in providing “value-added products” for our customers, that is, making or modifying our products to meet their specific needs. When customers order products from Schroeder, they are assured of a reliable source of supply, consistent and prompt service, and direct support. Pre- and post-technical service is provided to ensure customer satisfaction. So if you’re faced with a filtration dilemma, call us - Schroeder Industries: Advanced Fluid Conditioning Solutions®.

Importance of Biofuel Treatment

Most biodiesel is made from waste vegetable oil (WVO) collected from catering and food production facilities or from virgin feedstocks. The WVO often contains high levels of Free Fatty Acids, moisture, as well as solids, other impurities and contaminants. The solids can be filtered out using correct filtration procedures. The water must be removed to meet Tier 4 engine requirements less than 200 ppm. Pre-treatment of WVO prior to the transesterification process is important. Free Fatty Acids (FFA), oil contaminants and moisture need to be effectively removed in order to ensure a clean, irreversible reaction. WVO typically contains from 2-5% free fatty acids. If the Free Fatty Acids are above this amount, it is very difficult to produce biodiesel without an acid esterification process. The Free Fatty Acids number is determined by a filtration process. A full description of this process is available on request.

A common problem with biodiesel producers is instead of a clear separation between the biodiesel and the glycerine after the reaction and settling process, they end up with a semi-solid, gelatinous mixture that cannot be purified and used as fuel. This is an indication that the oil contained excessive Free Fatty Acids and/or water.

Raw vegetable oils that are produced by pressing oilseeds, such as canola, mustard, soybeans or other virgin oils like sugar cane or algae, can also be converted to biodiesel. The Free Fatty Acids level of these raw oils are usually 0.5% or less, which is low enough not to pose a problem. However, the oil may contain gum compounds that can create sludge deposits in the processing equipment, and can make it difficult to separate the glycerine at the end of the reaction.

Choose from our range of filter elements (reusable or disposable) and a range of filter housings to suit all budgets and production levels. Schroeder Fuel Filtration can supply individual components, as well as complete filtration systems. Irrespective of your budget and production levels, Schroeder Fuel Filtration has a solution to suit your operation.

