



Test Kit Technologies, Inc.

Selecting an Active Filter Medium

Problem: A processor has established baseline data for oil degradation. He feels that installation of an active filter system will economize his operation. How does he go about selecting such a system?

Background: The decision to install an active filter system is a major one. These systems can be of great benefit to a processor. Potential benefits include increased oil life, more consistent product quality, reduced time and cost for cleanup, reduced oil usage, extended shelf life, and reduced downtime. Such systems remove not only particulates but also eliminate certain classes of chemical compounds, the most prominent being alkaline soaps and metals. Removal of these materials, which act as accelerants to oil degradation, can result in a drop in the rate of formation of other groups of compounds such as polymers, the total polar fraction, and even free fatty acids.

Active filter materials come in a variety of forms. The most common are free-form powders, but there are also specialty papers, composite pads, and combinations of these forms. The selection process involves not only the material, but also the equipment needed to put it into a production environment. The latter is a major consideration since, one, it usually involves capital expenditures and two, the state of the art for oil filtration equipment is not up to the filter media themselves. Most equipment used in oil filtration was developed for water-based aqueous systems, not for filtering hot oil.

How Libra Can Help You Select the Proper Active Filtration System for Your Operation: No one-filter system is correct for all products. Libra staff can evaluate different systems for you. Using oil samples from your own operations, the effect of different filter products can be determined. Analysis of samples before and after filtration for heavy metals, soaps, polymers, total polar materials, and other characteristics will provide insights as to what each material can do for you. Following these preliminary studies, bench-top frying studies are conducted using your products to compare systems. Again, extensive analyses are conducted on the oils. The key to a filtration system is not how it affects the oil one time, but its cumulative benefits. Active filtration is not a program to "cleanup" bad oil, but to keep oil fresher longer. Once the bench-top work is completed, and the best candidate(s) have been determined, Libra staff can help evaluate the system in actual production or in pilot operations.

Benefits of Utilizing Libra's Expertise in Evaluating Active Filter Systems: Libra has been working with active filter media for more than twenty years. We have worked with both the manufacturers of such systems and products, and industrial and food service operations using these products. We understand the systems, their applications, and how to properly evaluate them. We have, in fact, developed many of the protocols currently used in the industry to test these products and systems. Our laboratories are well equipped to perform the necessary experiments under controlled conditions to give you a customized evaluation