

Cooking Oil Filtration 101

Understanding Fry Oil

Frying oil is made of triglyceride molecules: the back bone of 3 molecules of fatty acids each creating a chain of carbon and hydrogen, single bonding or double bonding. Each molecule is surrounded by free radicals. When FFA's (Free Fatty Acids) are allowed to soak into fried products, the result is overly greasy, fried food. As the FFA's continue to soak, they rapidly increase the production of smoke, foam and discoloration in the fry oil.



Free Fatty Acids and LAKOS

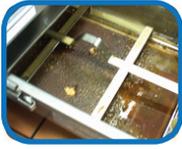
FFA's are the fried food industry's current method for quality control evaluation. The FFA content is given in a percentage of acid in the oil, with many factors contributing to how they are created. What can LAKOS filtration products do? LAKOS provides a means of improving one of the factors that causes issues with FFA's. The LAKOS separator concentrates the process flow down to a managed "under flow". This under flow has a high concentration of separable particulates that is then sent to a bag filter, paper filter, or other filter barrier device. These devices remove the solids from the oil stream or they can remain contained in a vessel with a much lower flow rate. The removal of this material typically takes place prior to carbonization or caramelization. During this process the rate at which FFA's are produced is dramatically reduced. This reduction is not specifiable except for those applications and conditions that have been documented. There are many frying applications and the equipment is as different as the products that are commercially fried. The effects of filtration on FFA's are evident but the results can vary greatly from each application. Keep in mind that the most effective filtration will provide the best results with FFA's and other areas that maintain a quality product to the consumer.

The Seven Enemies of Fry Oil

The three main enemies of clean cooking oil are heat, light and water. If the free radicals are attacked by any or all of these enemies, the triglyceride molecules break down. Fatty acid chains break away from the back bone creating free fatty acids.



The Seven Enemies of Fry Oil..... continued



4. Carbon- Carbon particles develop in fry oil as a result of the normal heating and cooking process. Carbon is like a dye discoloring your oil especially overnight when the oil lies dormant in your fryer. Regularly removing this carbon is essential for good quality frying oil.



5. Bacteria- There is another reason to remove carbon from your oil. Carbon is food for bacteria. As bacteria feed on carbon particles, just like all animals, they secrete a rancid liquid. This rancid liquid destroys the oil at a much quicker rate, tasting sour and affecting the polarity of the oil, making the oil gummier or thicker which collects around your fried food and on the walls of your fryer.



6. Oxidized Fatty Acids or OFA's- Oxidized fatty acids feed off starches, sugars and proteins in fry oil. As they do, they break down the fry oil's vital triglyceride backbone. OFA's increase the peroxide and anisidine values in the oil causing unpleasant odors and off-flavors in the food you cook.



7. Caramelization- Carbohydrates and proteins in food burn, causing the oil to brown or caramelize. This causes fried food to have a dark, unpleasant-looking appearance. Caramelizing also speeds the development of OFA's, enemy number 6.

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