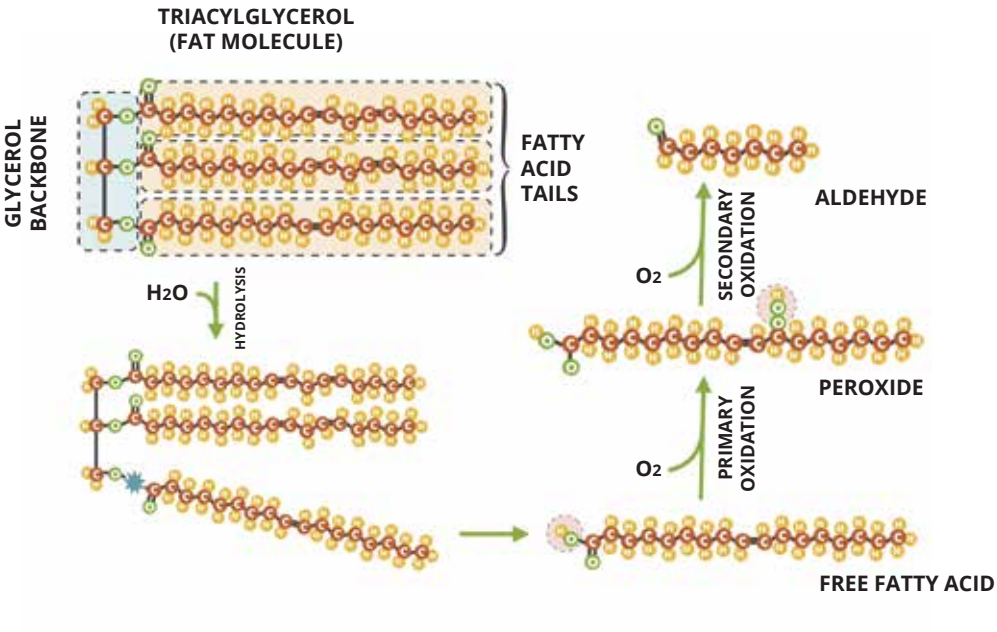
FILSORB®

OIL PURIFYING REAGENT

The Basis of the Frying Fat

A Fat is a glycerol molecule consisting of 3 fatty acid chains connected via ester bonds. Degradation of the fat, such as in frying, will cause these ester bonds to break, releasing fatty acids into the mix; often called-Free Fatty Acids (FFAs). FFAs carry a positive charge making them attracted to and likely to bind with any hydroxyl groups. These bonds then create peroxides, a primary oxidation marker of cooking oils. Hydroxyl radicals are formed in cooking oil by the ionization of water and other fat soluble components such as proteins. Peroxides decompose quickly and turn into aldehydes. Anisidine value is a measurement of the aldehyde and ketonic breakdown of the peroxides. The peroxide value in a sample of oil will rise and fall throughout its life whereas the anisidine value will accumulate and collectively rise over time.



The goal is to maintain the integrity of the cooking oil in order to extend its shelf life and the corresponding fried product's shelf life. The two best ways to limit peroxide formation are 1) by limiting the introduction of water and amino acids into the frying oil or, 2) limiting the presence of FFAs available to bind the hydroxyl radicals. The process of frying itself involves the introduction of food products containing both water and amino acids into the cooking oil making option 1 impossible. Therefore, option 2, limiting the presence of FFAs, is the best defense to limiting peroxide and anisidine values, both of which correlate to rancid sensory characteristics.

The measurement of total polar compound (TPC) is a comprehensive measurement of the accumulated molecules with a larger polarity than the glyceride itself. The measurement includes FFAs, aldehydes, ketones, alcohols, and nonvolatile products in totality making it a cumulative reading of FFAs, peroxides, and anisidine value.

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Filsorb is an oil absorbent containing a mixture of powdered sodium silicates/silicas with a specific pH, surface area, particle size, and molar ratio designed to remove FFAs at a large scale and other impurities such as peroxides and anisdines small scale

Filsorb is able to remove up to 70-80% of all FFAs present in used frying oil accomplishing an overall decrease in oxidation markers throughout an oil's and product's shelf life thus extending their use.

Filsorb will remove 4-12% of anisidines and 10-38% of peroxides. The reduction of TPCs is entirely dependent on the make-up of the oil i.e. oil with a low peroxide or anisidine value, but high FFA value, will show a significant drop in TPCs after Filsorb treatment due to the TCP reading being largely made up of FFAs.
On the other hand, a used frying oil with high peroxide and anisidine values, but a low FFA value, will show lesser reduction in TPCs after FILSORB treatment due to the peroxides and anisdines being removed at a significantly lesser rate than FFAs.

Maintaining a low FFA value throughout an oil's life is critical to maintaining low/reducing TPCs.

Filsorb SDS and Certificate Comments

Filsorb is a level 1 health rating on the Hazardous Materials Identification System or HMIS scale, a level 0 flammability, and a level 0 reactivity. When working with Filsorb a dust mask and protective eye wear is recommended.

Filsorb is approved and in compliance with all North American and European standards to be used as a filtration aid during frying as well as Kosher Certified.

FILSORB Canadian Cert
FILSORB XP20 SDS
FILSORB XP65 SDS
FILSORB Kosher
FILSORB Heavy Metals
FILSORB European Cert.
FILSORB US Cert.