



# SOYBEAN OIL PERFORMANCE



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U.S. grown soy-based ingredients  
for the food industry



# High Oleic Soybean Oil

## Fry Evaluation

High oleic soybean oil is an excellent U.S. grown alternative to your current frying oil. It was a top performer during a 24-day functionality and sensory study testing french fries prepared in:

**High Oleic Soybean Oil**

**Conventional Soybean Oil**

**High Oleic Sunflower Oil**

**High Oleic Canola Oil**

**Mid Oleic Sunflower Oil**







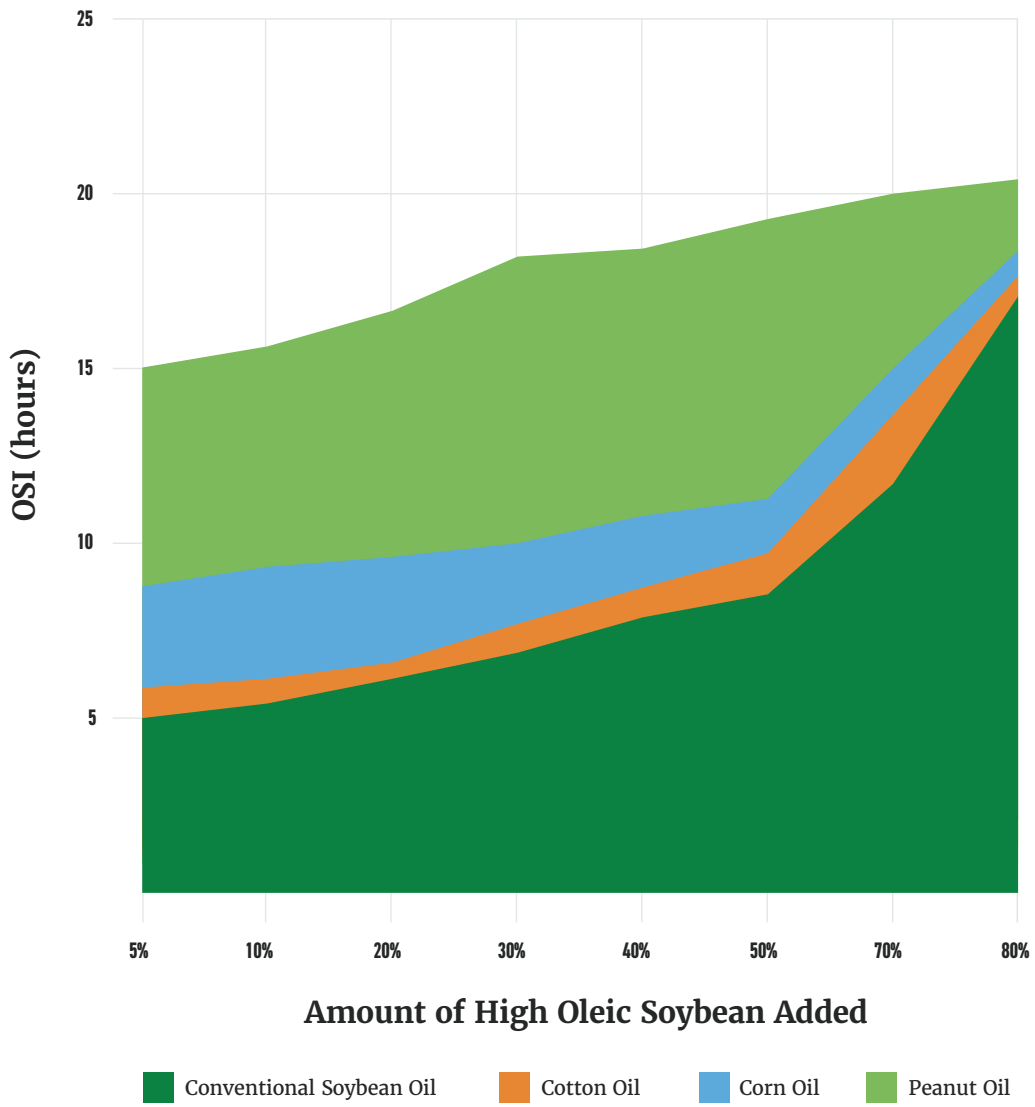
High oleic soybean oil's overall performance was consistent with high oleic sunflower oil and outperformed other high-stability options, such as 75% oleic canola oil. High oleic soybean oil presented one of the lowest levels of total polar materials (TPM) percentages and polymerization in the test. After 24 days of frying, high oleic soybean oil left less than 5% polymerization on the equipment, translating to less equipment maintenance.

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## High oleic soybean oil performance highlights:

- Top performer on overall likeability in a taste test which evaluated various sensory characteristics of french fries.
- Outperformed other high stability options.
- Lowest levels of total polar materials and polymerization.

# Oxidative Stability Index (OSI) of Commodity Oils Blended with High Oleic Soybean Oil



# High Oleic Blends

## Evaluation

A nine-month fry study evaluated blends of peanut, cottonseed, corn and soybean oils with high oleic soybean oil. The blended oils contained incremental amounts of high oleic soybean oil that demonstrated its impact on increasing the fry life of conventional oils while maintaining flavor characteristics and cutting costs.

**The study showed that blending high oleic soybean oil with conventional frying oil extends the Oxidative Stability Index of the oil, increasing shelf and fry life.**



# Donut Frying

## Evaluation

Cake and yeast-raised donut deep frying studies prove that high oleic soybean donut fry shortening performs similarly to traditional shortenings made with partially hydrogenated oils. The studies compared partially hydrogenated soybean oil (approximately 31% trans fat), a palm/soy blend, conventional soybean shortening and high oleic soybean shortening.

High oleic soybean shortening produced donuts similar in texture, interior grain, spread, height and size to partially hydrogenated soybean oil in both cake and yeast-raised donut frying studies.



**The total polar materials of high oleic soybean shortening was similar to partially hydrogenated soybean oil and significantly outperformed the palm/soy blend.**

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# Bakery Application

## Evaluation

A 12-month shelf life study evaluated the oxidative stability, application review and texture analysis of high oleic soybean, high oleic canola, conventional soybean, canola, partially hydrogenated and palm bakery shortenings.

**High oleic soybean shortening showed the least amount of change in texture compared to alternatives, including partially hydrogenated oil.**







Cakes made with high oleic soybean shortening were most similar to cakes made with partially hydrogenated shortening.

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Cookies made with high oleic soybean and conventional soybean shortenings had a more tender mouthfeel.

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High oleic soybean shortening produced the most similar viscosity and specific gravity, the measure of air added, to partially hydrogenated shortening. Icing made with high oleic soybean shortening is smooth, light, provides less color bleeding and is easy to decorate with.

# Puff Pastry & Pie Crust

## Evaluation

Soy-based specialty shortenings – such as roll-in shortenings and margarines for puff pastry – formulated with high oleic soybean oil, conventional soybean oil or combinations of both outperformed palm and partially hydrogenated oil in puff pastry applications. The puff pastry performed well in finished bake height and structure and also had the desired honeycomb texture, which adds to overall likeability.

**Soy-based ingredients performed on par with butter, which is considered the “gold standard” for puff pastry. Puff pastries made with soy-based specialty shortenings produced the ideal height and honeycomb layers.**





High oleic soybean shortening produced pie crusts with desired characteristics, including evenly browned, textured, flaky crust with an ideal finished product height and minimal shrink.



**Request your free sample of  
high oleic soybean oil or shortening  
at [food.USSoy.org/Sample](https://food.USSoy.org/Sample)**



**Whatever you make, U.S. Soy  
makes you more sustainable.**

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