

Publication Article for “Golden Fry Tech”  
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Launch of Internationally Patented Healthy Fryer Plate

~ Prevents oil degradation. Great for health conscious frying ~

In recent years, environmental issues have been widely reported as social concerns. Moreover, the good health trend for preventing geriatric diseases has been growing year after year. Primed by social movements like these, the widely patented “Golden Fry Tech” healthy fryer plate has become the buzz of the fast-food industry and tempura restaurants that frequently use fryers.

Golden Fry Tech is a safe oil preserving plate made of specially processed titanium. It has a semipermanent effect, which offers great advantages to users. When contacted by oil of 100 - 200°C during deep-frying, Golden Fry Tech uses the thermal energy of the oil to prevent oil degradation and reduce sticking of excess fat. As a result, it keeps oil from polymerizing, prevents rises in viscosity, minimizes oxidation and reduces smoking, odors and blackening.

The four major causes of oil degradation are ① contact with oxygen in the air, ② heating that causes thermal polymerization and cracking (augmented the higher the temperature), ③ hydrolysis caused by moisture in fried foods, and ④ substances released by fried foods.

Within the degradation process, three changes occur because of heating.

- ① Oxidation (A chemical reaction in which targeted substances lose electrons. More specifically, reactions in which oxygen combines with the substance and reactions that rob the substance of hydrogen.)
- ② Polymerization and cracking (Two or more hydrolyzed fatty acids join to form compounds of high molecular weight, which increases viscosity and causes foaming, smoking and irritating odors. )
- ③ Color change (Blackening)  
Fryer oil is simultaneously oxidized by oxygen in the air, hydrolyzed by water, degraded by substances released from foods, and thermally polymerized and cracked by heat. These processes cause oil oxidation, rises in carbonyl value and viscosity, smoking, odors and blackening.

Golden Fry Tech prevents frying oil degradation because oxidized titanium slows oil oxidation, hydrolysis, and thermal polymerization and cracking, thus minimizing oil oxidation, rises in viscosity, smoking, odors, foaming and blackening.

It is currently being used at two Seven Eleven stores in Japan that are serving as monitors. Their comments are below. The Golden Fry Tech plates were lent for a two-month period from

