



Test Kit Technologies, Inc.

The VERI-FRY® Water Emulsion Titratables (WET) Test to Evaluate The Efficiency of Fryer Cleanup

Problem: Many fryer operators have experienced reduced oil life, reduced product quality, and/or operational problems resulting from a failure to properly clean their fryers. The question is, "how does a fryer operator monitor the effectiveness of fryer cleanup?"

Background: The standard procedure for cleaning and sanitizing a deep fat fryer is to drain the frying oil and rinse to remove excess fat, followed by a "boil out" with a strong caustic. Caustic or alkali cleaners contain strong bases, such as caustic soda (Sodium Hydroxide NaOH), and surfactant materials. The caustic cleaner saponifies residual fat, and the combination of strong cleaner and high temperature is usually adequate to remove polymer deposits from the walls and heating elements of the fryer. Following the "boil out", the unit is rinsed to remove traces of the cleaning compound. When cleaning fryers, an acid rinse is strongly recommended to neutralize any residual caustic.

If residual caustic cleaner is not removed from the fryer walls, or the rinse water is not drained from the entire unit, it can react with the hot frying oil causing it to quickly degrade. Cleaning materials usually contain metal ions such as sodium, calcium, and magnesium. The metals react with fatty acids in the presence of water to form alkaline soaps, such as sodium oleate. Soaps are powerful surfactant materials, which can adversely affect frying operations in a number of ways. They promote foaming, which can be both a worker safety issue and can accelerate oxidation of the frying oil; they increase contact between oil and food, which can affect the product's color, the amount of oil it absorbs, and its overall acceptance; and they promote oil breakdown by enhancing information of polymers and other degradation products. Even small traces of excess soaps can have a dramatic effect.

Using the VERI-FRY® WET TEST to Evaluate Cleanup Efficacy: Use of this test can detect, with good sensitivity, residues of cleaning agents/wash-out solutions used for cleaning and sanitizing fryers and other processing equipment. To determine whether your cleanup crew (or night shift in restaurant) properly eliminated traces of caustic cleaner, use two WET tests. Use the first to test the parts per million "soaps" in your fresh or makeup oil. Use the second to test the oil in the fryer as soon as it reaches frying temperature, but before frying is initiated. If the second WET value is higher, it indicates that cleanup was not as efficient as it could have been.

Benefits of Evaluating Cleanup Efficiency Using the VERI-FRY® WET: By using the WET quick test to monitor cleanup efficiency, fryers can reap a number of benefits. The presence of elevated concentrations of "soaps" in "fresh" frying oil can reduce frying oil life and the quality of the oil itself, which compromises product quality, can foul conveyor belts and chains, reduce product shelf-life, and increase oil usage. Each of these problems reduces operating efficiencies and, therefore, increases operating costs.