



Harmonized Hot Oil Test For Printed, Finished Foodservice Products *Updated 2013*

Purpose

The purpose of this test is to use dyed corn oil to determine the grease resistance and soak-through of paper (and polymer?) foodservice products.

Materials

- One gallon Mazola corn oil (no substitutes)
- D53004 Chromatint® Red IK Liquid* [*This red dye may be purchased from [Chromatech Inc.](#)*]
- 3000ml round bottom flask (small steel beaker)
- Hot plate
- Laboratory thermometer
- Heating mantle for flask, capable of maintaining an oil temperature of 65°-68° C (150-155° F)
- Container for holding used oil, one gallon
- Paper towels
- Stopwatch
- Data collection form

** Please note this red dye replaces the "Oil, Red HF Liquid (organic dye in Naphthenic oil (red iodine dye))" listed in previous versions of this test. The previously recommended dye is no longer available.*

Specimen Preparation

Obtain 3 specimens from each production machine (or sample lot) for testing and label the specimens.

Testing Procedure

- Pipette 3.8ml of the red dye into one gallon of corn oil and mix thoroughly for a concentration of 0.1%. A new solution should be prepared at least every six months.
- Place specimen(s) to be tested on flat, level surface that is covered with paper towel.
- Heat dyed corn oil in a 3000ml round bottom flask to 65° - 68° C (150-155° F). Maintain this temperature throughout testing. Be careful not to overheat as oil may burn above 200° F.
- Pour the heated oil into the first specimen to a depth of 3mm (1/8th inch) [1/16th to 1/8th inch] depth. Start the timer, wipe lip of flask with paper toweling and return the flask of oil to the heat source.
- After one minute, pour heated oil into the second specimen at the same 3mm (1/8th inch) depth. Continue filling specimens at one (or two) minute intervals.
- Let specimens stand undisturbed for 20 minutes.



- After 20 minutes, pour and scrape oil from the first specimen with a rubber spatula and return oil to a holding container. Repeat for other specimens.
- Wipe the remaining oil with a paper towel, and immediately inspect the back side of the specimen for soak-through and mark those areas with a pen or pencil. Examine stains on back of specimen. Staining on the bottom of the specimen, without penetration, is not a failure. If this occurs, the sample passes.
- Examine the specimen for evidence of soak through on the paper towel. Any oil found on the towel constitutes a failure. If no oil is found on the towel, the specimen passes.
- Repeat the above procedures with the remaining specimens, using the same sequence that was used in filling the specimens, so that each specimen is examined after 20 minutes.

Reporting

Document the results of the inspection on the appropriate data collection form.

Questions? Please send an email to fpi@fpi.org.