

Extra Virgin Olive Oil Acidity Test Kit



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Extra Virgin Olive Oil Acidity Test Kit

Now there is an easy, affordable and accurate way to determine the quality classification and freshness of your Olive Oil.

Acidity (expressed as Oleic acid) is the most fundamental quality measurement of Olive Oil. It is the primary indicator of Olive Oil purity and freshness.

The quality of Olive Oil is directly related to the degree of breakdown of the fatty acids in the oil. As the bound fatty acids break down, free fatty acids are formed which increase the acidity of the oil and degrade its overall quality. Acidity, expressed as *Oleic Acid*, is a measure of the percent of free fatty acid present in the Oil which is directly related to its purity.

The quality of Olive Oil can be adversely affected during maturation and by environmental conditions. Mishandling, processing and bruising during harvesting can also contribute to a breakdown of fatty acids and an increase in free acidity. Improper and/or long term storage can cause Olive Oil to "breakdown" and become rancid. Regular acidity testing is the best way to ensure and maintain quality and freshness.

Commonly, testing acidity can be a complicated process requiring the use of various chemicals in a laboratory environment. Hanna has simplified the process of testing acidity in an easy to understand test kit that can be used almost anywhere to produce quick and accurate results.

Studies have shown that the quality of Olive Oil has a direct impact on its health benefits. Extra Virgin Olive Oil contains higher levels of antioxidants, particularly Phenols and vitamin E, because it is less processed. Antioxidants can help prevent oxidation damage to body tissue caused by free radicals. Studies have also shown that the Oxidation of LDL (bad) cholesterol is associated with the hardening of arteries that can lead to heart disease.

With the HI 3897 test kit it is possible to easily and accurately test the quality of Olive Oil at various stages of processing and storage to monitor and maintain the highest quality classification.





The HI 180 is a compact and lightweight magnetic stirrer which incorporates electronic controls that allow the user to regulate the speed with precision. In addition to speed control, Hanna's Speedsafe™ system will assure that the maximum speed is never exceeded.

Specifications for HI 180 Magnetic Stirrer

Maximum Stirring Capacity	1 L (0.26 g)
Speed Range	100 rpm min.; 1000 rpm max.
Installation Category	II
Cover Material	ABS plastic
Environment	0 to 50 °C (32 to 122 °F) 95% RH max
Dimensions	dia. 137 mm x 51 mm (h) (5.39 x 2")
Weight	640 g (1.4 lb.)

In accordance with the European Community (EC) reg. CEE2568/91 quality classification of Olive Oil based on acidity (expressed as Oleic acid) is as follows:

Extra Virgin Olive Oil:

Acidity $\leq 1\%$

"Perfect flavor and odor", with a maximum acidity, expressed as Oleic acid, of 1g/100g

Virgin Olive Oil:

Acidity 1 - 2%

"Perfect flavor and odor", with a maximum acidity, expressed as Oleic acid, of 2g/100g

Ordinary Virgin Olive Oil:

Acidity 2 - 3.3% (tolerance of 10%)

"Good flavor and odor", with a maximum acidity, expressed as Oleic acid, of 3.3g/100g

Virgin Lampante Olive Oil:

+ 3.3%. Not fit for human consumption

"Off flavor and odor", with a maximum acidity, expressed as Oleic acid, > 3.3g/100g

Sensory Quality of Olive Oil

The sensory analysis of virgin olive oil is based on a panel test, developed by the International Olive Oil Council. The rating is awarded on the basis of a scale of points running from 0, which indicates that the oil has extreme defects to 9, which indicates that the oil has no defects at all. See the following chart for sensory ratings of each grade of Olive Oil.

Extra Virgin Oil >6.5

Virgin >5.5

Ordinary Virgin >3.5

Virgin Lampante <3.5

Optional Technical Information:

Olive oil is a complex compound made of fatty acids, vitamins, volatile components, water soluble components and microscopic bits of olive. The 3 primary fatty acids (triglycerides) are oleic, linoleic, and linolenic.

Oleic Acid (18:1) = 55 ~ 85%

Linoleic Acid (18:2) = 3.5 ~ 21.00%

Linolenic Acid (18:3) = 0.0 ~ 1.5%

Oleic acid makes up 55-85% of olive oil. Oleic acid is the most abundant fatty acid found in nature.

Studies show that high concentrations of oleic acid can lower blood levels of total and LDL (bad) cholesterol, reducing the long term risk of heart disease.

Olive Oil Composition

Palmitic Acid (C16:0) 7.5 - 20%

Palmitoleic Acid (C16:1) 0.3 - 3.5%

Stearic Acid (C18:0) 0.5 - 5.0%

Oleic Acid (C18:1) 55.0 - 83.0 %

Linoleic Acid (C18:2) = 3.5 - 21.0%

Linolenic Acid (18:3) = 0.0 ~ 1.5%

Others 1.5 - 3.2%



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Ordering Information

HI 3897 *Extra Virgin Olive Oil Acidity Test Kit* is comprised of HI 180 magnetic stirrer, (1) 230 mL bottle HI 3897-0 titrant solution, (6) 40 mL bottle of organic solvent with magnetic stir bar, 5.0 mL calibrated syringe, 1.0 mL calibrated syringe with tip in a deluxe hard carrying case.

Accessories

HI 3897-010Replacement Kit (10 tests)
 HI 740053100 mL graduated glass bottle (10 pcs)
 HI C215-003005 mL graduated syringe
 HI 7401431 mL graduated syringe (6 pcs)
 HI 740144Tip for 1 mL graduated syringe (6 pcs)
 HI 180MDMagnetic Stirrer w/Speedsafe technology
 HI 731319Magnetic stir bar

Specifications for HI 3897

Range	0 to 1% acidity
Smallest Increment	0.01 mL = 0.01%
Analysis Method	Titration
Sample Size	4.6 mL (or 4.0 g)
Number of Tests	6
Case Dimensions	112 x 390 x 318 mm
Shipping Weight	3000 g (6.61 lb.) w/case

Authorized Distributor



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