



Solvent mixtures for Acidity analysis in Olive Oil

The **quality of olive oil** is defined by its physical, chemical and organoleptic characteristics.

In order to guarantee the purity and quality of the olive oil, the **Commission Regulation (EEC) No 2568/91 of 11 July 1991** defines 8 categories of olive oil, their characteristics and the relevant methods of analysis, with the purpose of differentiating between the various types of oil.

Olive oils are graded based on the acidity of the pressed oil, among other factors.

Olive oil categories	Acidity (%)
1. Extra virgin olive oil	≤ 0.8
2. Virgin olive oil	≤ 2.0
3. Lampante olive oil	> 2.0
4. Refined olive oil	≤ 0.3
5. Olive oil composed of refined and virgin olive oils	≤ 1.0
6. Crude olive pomace oil	--
7. Refined olive pomace oil	≤ 0.3
8. Olive pomace oil	≤ 1.0

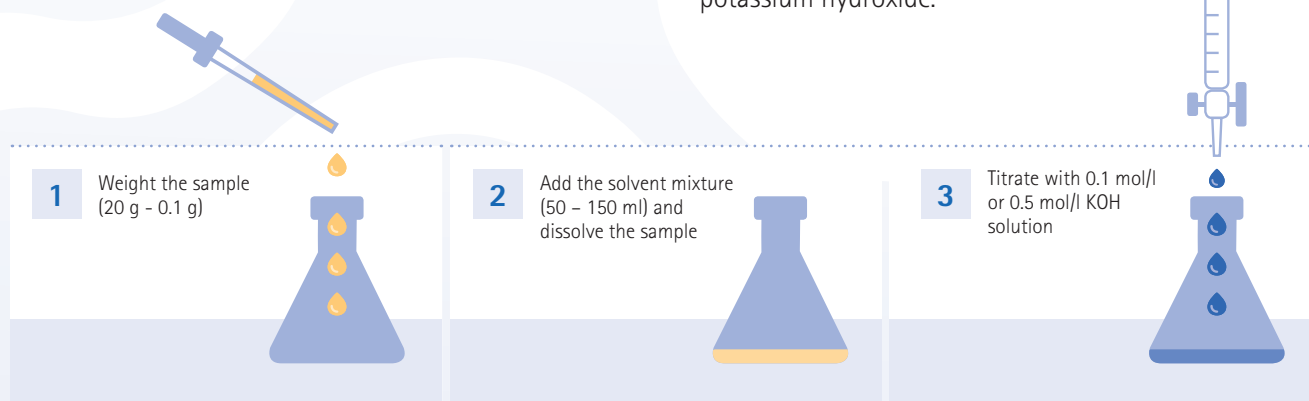


Determination of Acidity

The acidity is the determination of **free fatty acids** in olive oils. The content of free fatty acids is expressed as acidity calculated conventionally.

Principle

A sample is dissolved in a **mixture of solvents** and the free fatty acids present titrated using an ethanolic solution of potassium hydroxide.





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Acidity: expressed as percentage of oleic acid

Acidity as a percentage by weight is equal to:

$$V \times c \times M / 1000 \times 100 / W = (V \times c \times M) / (10 \times W)$$

where:

V = the volume of titrated potassium hydroxide solution used, in milliliters;

c = the exact concentration in moles per liter of the titrated solution of potassium hydroxide used;

M = the molar weight in grams per mole of the acid used to express the result (oleic acid = 282);

W = the weight in grams of the sample.

Reagents used in Acidity analysis of Olive Oil

Description	Code	Package
Ethanol / Diethyl Ether 1:1 v/v + Phenolphthalein 15 mg/L	281298.1611	1000 ml glass
	281298.1612	2.5 L glass
	281298.0314	5 L aluminium
	281298.0515	10 L stainless steel (***)
	281298.0537	30 L stainless steel (***)
Ethanol / Diethyl Ether 1:1 v/v + Phenolphthalein 0.1 %	285483.0314	5 L aluminium
	285483.0515	10 L stainless steel (***)
	285483.0537	30 L stainless steel (***)
Ethanol / Diethyl Ether 1:1 v/v + Bromophenol Blue 0.2 % (**)	285482.0537	30 L stainless steel (***)
Potassium Hydroxide 0.1 mol/l (0.1N) in ethanol (*)	182146.1611	1000 ml glass
Potassium Hydroxide 0.5 mol/l (0.5N) in ethanol (*)	181519.1611	1000 ml glass

(*) If the quantity of 0.1 mol/l Potassium Hydroxide solution required exceeds 10 ml, use the 0.5 mol/l solution.

(**) In the case of strongly coloured oils.

(***) Returnable Container.

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