



# Propionitrile for UV, HPLC

**Olive oil is nutritious and is very beneficial to our health** (regulates cholesterol levels in blood, helps control blood pressure, etc.).

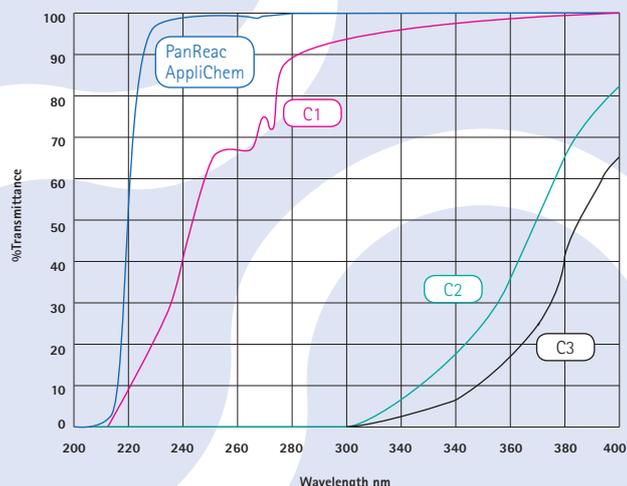
Because of its properties, its price on the market is higher than that of other vegetable oils. In the past, some companies have **adulterated** olive oil by mixing it with **other lower quality oils**. This is a fraudulent practice that places public health at risk.

This practice has caused organisations like the FDA (*Food and Drug Administration*), the Codex Alimentarius Commission or the International Olive Council to establish official methods for **controlling the pureness of the olive oils** that are sold on the market. In many cases these methods have been incorporated to European Union legislation.

One of the analyses that are conducted to detect possible adulterations is the composition of **triglycerides**. A triglyceride is an ester resulting from the bonding between a glycerol molecule where the three -OH groups have been replaced by three fatty acids. The composition of fatty acids depends on the type of oil. For example rapeseed oil, soy bean or sunflower oils have a high content of linoleic acid.

**Commission Regulation (EU) No. 1348/2013 of 16 December 2013**, describes the official method for detecting extraneous oils in olive oils.

This method is used for determining the triglycerides by HPLC using **propionitrile** as the mobile phase.



Comparative of Propionitrile UV spectrum of PanReac AppliChem and different competitors (C1, C2 and C3).



## Main advantages

PanReac AppliChem has optimised the system for purifying **Propionitrile code 365732** by carrying out a **double distillation** to guarantee its **HPLC quality**, unique on the market, and to **extend the life of its chromatography system** (column, cells, detector, etc.).

- Maximum purity
- Minimum non-volatile matter content
- High transparency in UV spectrum

Determination	Specifications		Actual value		
	PanReac AppliChem 365732	PanReac AppliChem 365732	C1	C2	C3
Aspect	Transparent, colorless	Transparent, colorless	Transparent, colorless	Transparent, light yellow	Transparent, yellow
APHA Color	≤ 10 APHA	< 10 APHA	10 APHA	> 50 APHA	>> 50 APHA
Non-volatile matter	≤ 0.0005%	< 0.0001%	Abundant (toffee color)		
Water	≤ 0.03%	0.025%	0.062%	0.16%	0.043%
Density at 20/4	0.781-0.783	0.781	0.781	0.778	0.778
Assay (GC)	≥ 99.9%	99.9%	99.9%	99.8%	99.7%
UV Spectrum (% T):					
λ = 225 nm	≥ 80%	> 80%	16.3%	0.0%	0.0%
λ = 235 nm	≥ 94%	98.6%	30.0%	0.0%	0.0%
λ = 250 nm	≥ 97%	99.2%	66.4%	0.0%	0.0%
λ = 290 nm	≥ 99%	100.0%	91.3%	0.0%	0.0%
λ = 400 nm	≥ 99%	99.8%	99.6%	81.8%	66.2%

Comparative of Propionitrile specifications and actual value of PanReac AppliChem and different competitors (C1, C2 and C3).



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# Propionitrile for UV, HPLC

Method for the detection of extraneous oils in olive oils  
Commission Regulation (EU) No. 1348/2013 of 16 December 2013



This method does not allow identifying the type of extraneous oil and only indicates if the olive oil is authentic.

The **oil is purified** by solid phase extraction (SPE) on silica gel cartridges.

The **composition of triglycerides** is determined by reverse phase high-resolution liquid chromatography using a refractive index detector and HPLC grade propionitrile as the mobile phase.

On the other hand, **fatty acid methyl esters (FAMES)** are prepared from purified oil by methylation with a cold solution of potassium hydroxide in methanol. Then the esters are analysed by capillary gas chromatography using high-polar columns and using a flame ionisation detector (FID).

A theoretical calculation is carried out of the triglycerides composition based on fatty acids, jointly with the actual composition of triglycerides obtained through HPLC, and the resulting values are compared with those contained in a database built from genuine olive oils.

PanReac AppliChem offers a complete range of reagents for conducting this analysis.

Description	Code	Package
<b>Oil purification</b>		
Acetone (Reag. Ph. Eur.) for analysis, ACS, ISO	131007.1611	1000 ml
	131007.1211	1000 ml
	131007.1612	2.5 L
	131007.1212	2.5 L
Diethyl Ether stabilized with ~ 6 ppm of BHT (Reag. Ph. Eur.) for analysis, ACS, ISO	132770.0311	1000 ml
	132770.0314	5 L
n-Heptane for analysis	122062.1611	1000 ml
	122062.1612	2.5 L
n-Hexane 95% for analysis, ACS	133242.1611	1000 ml
	133242.1612	2.5 L
<b>HPLC analysis of triacylglycerols</b>		
<b>Propionitrile for UV, HPLC</b>	<b>365732.1611</b>	<b>1000 ml</b>
<b>Preparation of fatty acid methyl esters</b>		
Methanol (Reag. Ph. Eur.) for analysis, ACS, ISO	131091.1611	1000 ml
	131091.1211	1000 ml
	131091.1612	2.5 L
	131091.1212	2.5 L
	131091.1214	5 L
Potassium Hydroxide 85% pellets for analysis, ACS, ISO	131515.1211	1000 g
	131515.1214	5 kg

We have other formats available. Do not hesitate to contact us.

IP-015EN

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