

**Sample nature:** VEGETABLE OIL  
**Botanical species:** MACADAMIA TERNIFOLIA  
**Reference name:** ORG. MACADAMIA  
**Batch number:** B020517  
**Origin:**  
**Part:** SEED  
**Pyrenessences Reference:** N392

**Date of reception:** 05/09/2017 **Date analysis:** 13/09/2017  
**Packaging:** Amber plastic bottle 100 ml – ambient temperature  
**Analysis:** FAME – Fatty acids profile + CP + IP + IA + II  
**Shelf life in the lab.:** 1 year

**Eurofins Reference:** AR-17-FG-016447-01  
**Received on:** 04/09/2017  
**Packaging:** plastic container  
**Reception temperature:** room temperature  
**Storage temperature:** room temperature  
**Start of analysis:** 04/09/2017 **End analysis:** 22/09/2017

PHYSICALS CHARACTERISTICS

	METHOD	ORG. MACADAMIA OIL BATCH B020517		NORM	
		Minimum	Maximum		
Specific gravity 20 °C	I-ANA-003-A*	<b>0,915</b>			
Specific gravity 15 °C	I-ANA-003-A*	<b>0,919</b>			
Refractive index 20°C	NF ISO 280	<b>1,468 3</b>			
Optical rotation 20°C	NF ISO 592	<b>0 °</b>			
Miscibility in ethanol 70 %	NF ISO 875	<b>No soluble in alcohol</b>			
Flash point : SETAFLASH	FD ISO/TR 11018	<b>&gt; 130,0 °C</b>			
Peroxide Index	01/2008 : 20505	<b>5,0 meq O2 / kg</b>	<b>2,3 mmol O2 / l</b>		
Acidity Index	NF ISO1242 & 660	<b>3,4 mg KOH/g</b>			
Iodine value	ISO 3961 : 2013	<b>84 g Iode / 100 g</b>			
Unsaponifiable matter	EP 9.2, EP 2.5.7	<b>0,4 %</b>			
Saponification value	EP 9.2, EP 2.5.6	<b>194 mg KOH/g</b>			

\* Interns Methods

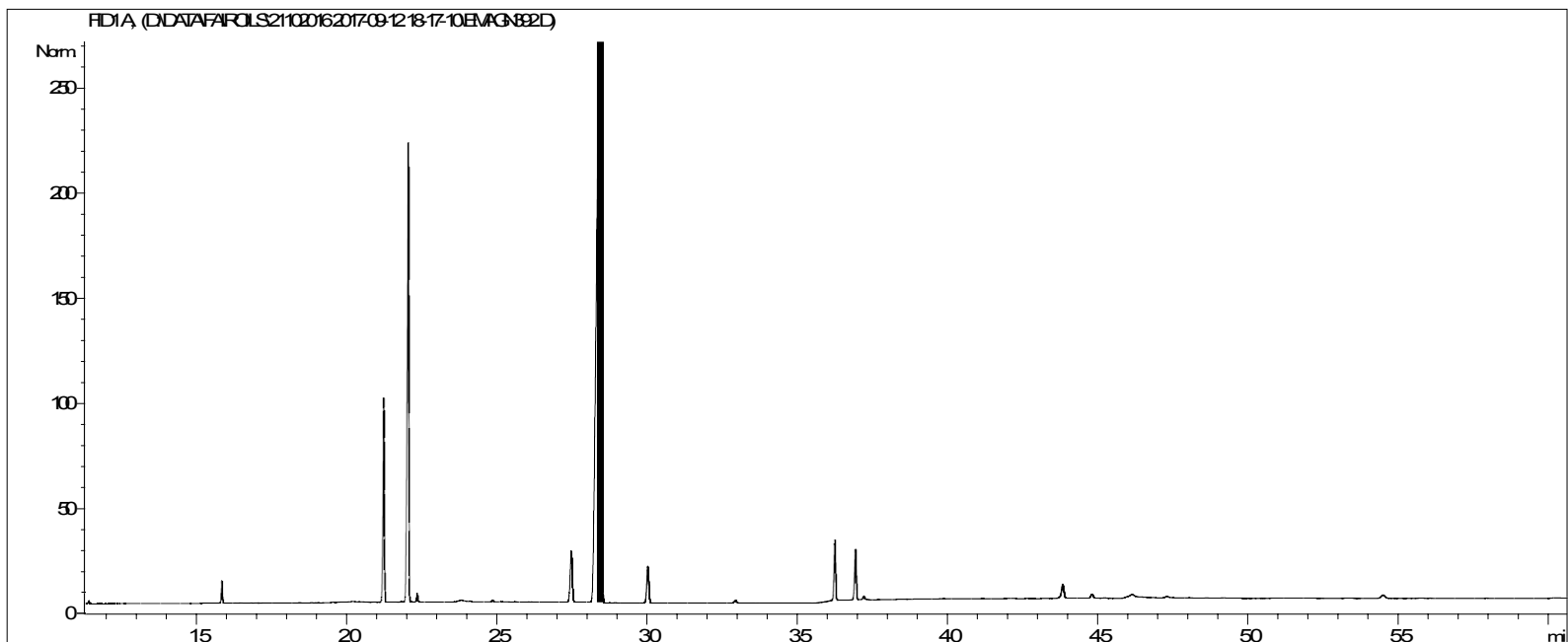
GAS CHROMATOGRAPHY norm NF ISO 11024

**Analysis conditions:**

- GC/SM 7890/5975 AGILENT: Column : VF WAX polar : 60 m × 0,25 mm × 0,5 µm
- GC/FID 6890 AGILENT: Column : VF WAX polar : 60 m × 0,25 mm × 0,5 µm
- Temperature programm: 1 mn to 130 °C – 6,5 °C/mn → 170 °C - 2,75 °C/mn → 215 °C - 12 mn to 215 °C
- 40 °C/mn → 230 °C – 50 mn to 230 °C
- Carrier Gas : He 30 psi/FID ; 23 psi/MS
- Sample: EMAG in Isooctane
- Mass range : 30 à 450
- Volume: 1 µL
- Mass range: 30 to 350, Oil components are identified by a combination of retention times

(our own database) and mass spectra library NKS 75 000 records,  
 Percentages are calculated from GC/FID peaks areas without using corrections factors

### Chromatographic profile (GC/FID):



### Identification results – ORG. MACADAMIA OIL BATCH N° B020517

Peak	RT(min)	Component	%	Min – Max %
1	11,4	LAURIC ACID C 12 : 0	0,08	
2	15,8	MYRISTIC ACID C 14 : 0	0,71	< 1,5
3	21,2	<b>PALMITIC ACID C16 : 0</b>	<b>8,60</b>	<b>7 - 10</b>
4	22,0	<b>Z-PALMITOLEIC ACID C16 : 1 ω7</b>	<b>22,41</b>	<b>16 - 24</b>
5	22,3	E-PALMITOLEIC ACID C16 : 1 ω7	0,31	
6	24,8	8-HEPTADECENOIC ACID C17 : 1	0,05	
7	27,4	<b>STÉARIC ACID C18 : 0</b>	<b>3,19</b>	<b>2 - 4</b>
8	28,3	<b>OLEIC ACID C18 : 1 ω9</b>	<b>50,93</b>	<b>53 - 67</b>
9	28,5	VACCENIC ACID C18 : 1 ω11	4,10	
10	30,0	<b>LINOLÉIC ACID C18 : 2 ω6</b>	<b>2,21</b>	<b>1,5 – 4,5</b>
11	32,9	LINOLÉNIC ACID C18 : 3 ω3	0,19	< 0,5
12	36,2	<b>ARACHIDIC ACID C20 : 0</b>	<b>2,85</b>	<b>1,5 - 3</b>
13	36,9	<b>GONDOIC ACID C20 : 1 ω9 (GADOLEIC)</b>	<b>2,52</b>	<b>1,5 - 3</b>
14	37,2	GONDOIC ACID ISOMER	0,22	
15	43,8	BEHENIC ACID C22 : 0	1,00	< 1
16	44,7	ERUCIC ACID C 22 : 1	0,27	< 1
17	54,4	LIGNOCERIC ACID C24 : 0	0,36	< 0,5
		<b>TOTAL</b>	<b>100,00</b>	

**No pesticides detected.**

Date: 21/10/2017