

Sample nature: VEGETABLE OIL
Botanical species: THEOBROMA CACAO
Reference name: ORGANIC COCOA OIL
Batch number: B017117
Origin:
Part: BEAN

Pyrenessences Reference: M898
Date of reception: 21/07/2017 **Date analysis:** 25/07/2017
Packaging: Amber glass bottle 100 ml – ambient temperature
Analysis: FAME – Fatty acids profile + CP + IP + IA
Shelf life in the lab.: 1 year

Eurofins Reference: AR-17-FG-013646-02
Received on: 24/07/2017
Packaging: glass container with screw closure
Reception temperature: room temperature
Storage temperature: room temperature
Start of analysis: 24/07/2017 **End analysis:** 08/09/2017

PHYSICALS CHARACTERISTICS

	METHOD	ORG. COCOA BEANS OIL BATCH N° B017117
Specific gravity 20 °C	I-ANA-003-A*	Solid
Specific gravity 15 °C	I-ANA-003-A*	Solid
Refractive index 20°C	NF ISO 280	Solid
Optical rotation 20°C	NF ISO 592	Solid
Miscibility in ethanol 95 %	NF ISO 875	Solid
Flash point : SETAFLASH	FD ISO/TR 11018	Solid
Peroxide Value	PE 01/08 : 20500	0 meq O2 / kg
Acidity Index	NF ISO1242 & 660	1,81 mg KOH/g
Iodine value	ISO 3961	47 g I₂/100g
Unsaponifiable matter	EP 9.2, EP 2.5.7	0.4 %
Saponification value	EP 9.2, EP 2.5.6	194 mg KOH/g

* Interns Methods

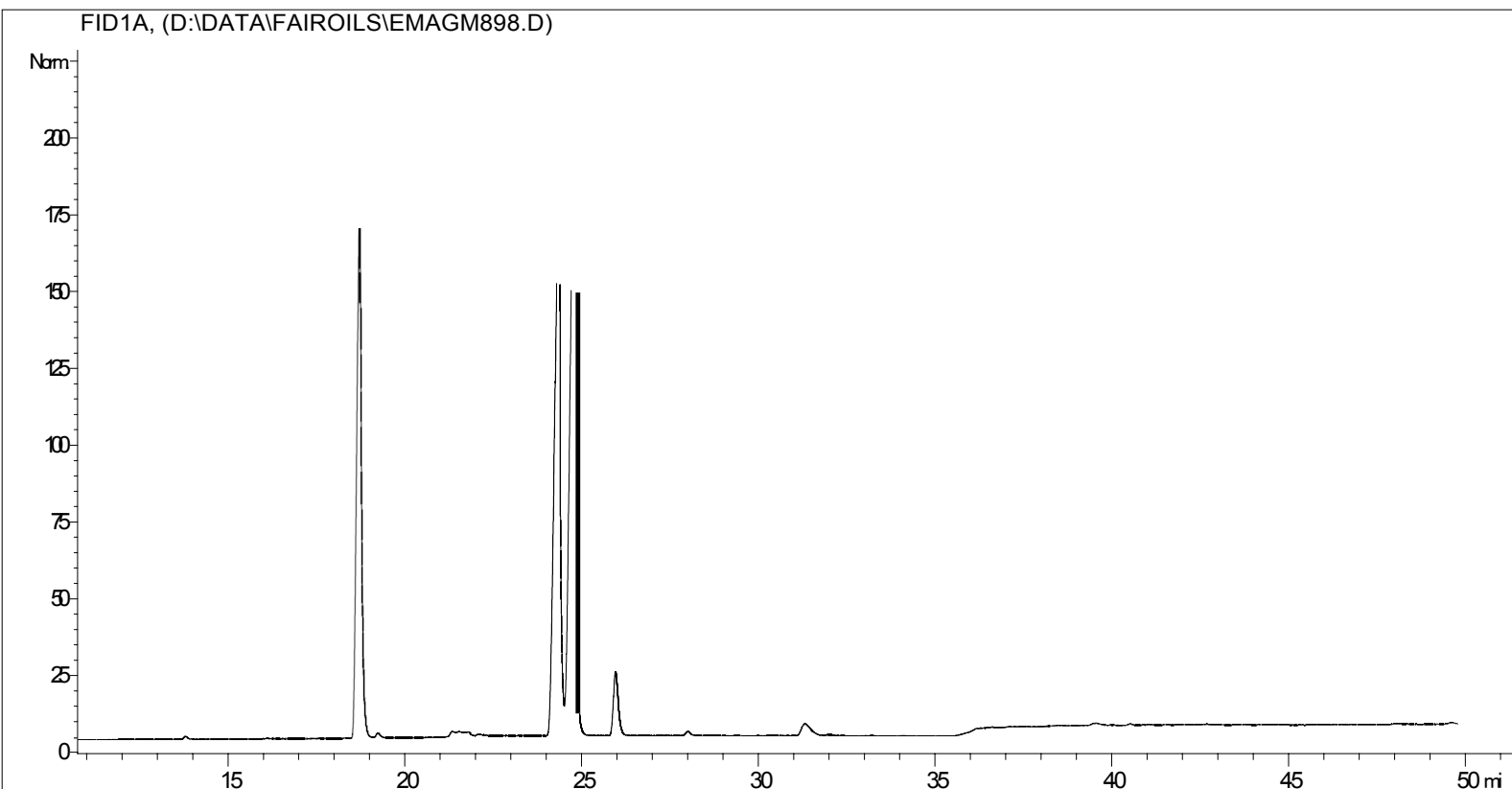
GAS CHROMATOGRAPHY norm NF ISO 11024

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 – ORGANIC COCOA BEANS OIL BATCH N°B017117

Peak	RT(min)	Component	%	Min – Max %
1	13,8	MYRISTIC ACID C 14 : 0	0,11	
2	16,1	PENTADECANOIC ACID C 15 : 0	0,03	
3	18,7	PALMITIC ACID C16 : 0	23,92	
4	19,2	E-PALMITOLEIC ACID C16 : 1 ω7	0,22	
5	21,3	MARGARIC ACID C17 : 0	0,87	
6	24,3	STÉARIC ACID C18 : 0	34,84	
7	24,8	OLEIC ACID C18 : 1 ω9	35,65	
8	26,0	LINOLÉIC ACID C18 : 2 ω6	2,93	
9	28,0	LINOLÉNIC ACID C18 : 3 ω3	0,20	
10	31,3	ARACHIDIC ACID C20 : 0	1,02	
11	39,5	BEHENIC ACID C22 : 0	0,17	
12	40,5	ERUCIC ACID C 22 : 1	0,04	
		TOTAL	100,00	

Pesticides: Not detected

Date: 11.09.2017