

# CAMPO RESEARCH COFFEE OIL



novel functional ingredients for  
multi-purpose formulations



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CAMPO® Multi-Purpose Cosmetic Base Chemicals & Active Ingredients

CAMPO® Novel Functional Active Cosmetic Ingredient & Raw Materials

*What does this cup of Coffee do to your body contours by cellulite fat busting and skin UV protection?*



**Campo Research knows all  
For Detailed Answers  
Contact Campo's Representatives:**

## ***Caffeine's biochemical effects***

There are four ways in which caffeine stimulates the nervous system. of these, one is of primary importance. Another has some level of importance, and the other two only occur at unrealistically high levels of caffeine in the body.

The first of these methods, and the most important, is blocking adenosine receptors. As caffeine has a similar structure to the adenosine group, but also has more heavily electrophilic and nucleophilic functional groups than adenosine (as, for instance, seen in cyclic AMP). This means that caffeine will fit adenosine receptors as well as adenosine itself will. Thus, cyclic AMP remains active, rather than being broken down.

Second among the effects of caffeine is phosphodiesterase inhibition. The phosphodiesterase class of enzymes includes a number of enzymes responsible for breaking down cyclic AMP, thus depriving the body of an energy supply. Caffeine fools phosphodiesterase into attacking it instead, which inhibits the breakdown of cyclic AMP. However, the concentration of caffeine required for this effect to become significant is sufficiently high (of caffeine) that the adenosine blocking remains the dominant factor but a novel occurrence of biochemical effect of phosphodiesterase inhibition action will be the conversion of UV rays striking the human skin, which radiation are then converted in the presence of caffeine to more pronounced phosphodiesterase inhibition (cellulite fat busting).

The other two laboratory effects of caffeine have been judged insignificant in actual biochemical situations. (not of cosmetic importance)

# Coffee Oil Composition

**Spark Chromatography- May 23<sup>rd</sup> 1995 Test run: 7.05.05 - 7.05.038**

**Results: in % ( percentage )**

<b><u>Chemical</u></b>	<b><u>(%) Percentage</u></b>
1,3,7-Trimethyl-2,6-dioxapurine	75%
1,3-Dimethylxanthine	10%
3,7-Dethylyxanthine	1.0%
Phenols	5.5%
Salicyclic acid-3,3-5,5-Trimethylcyclohexylester	6.0%
Other methylated purine derivatives (undermined as cAMP phosphodiesterase inhibitors)	2.0%

This assay results certify to be correct.

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Dr. JayaGopi  
Director - Labs. Services  
JCT Kampoyaki Consumer Safety Lab.

## **COFFEE OIL**

### **SOLUBILITY**

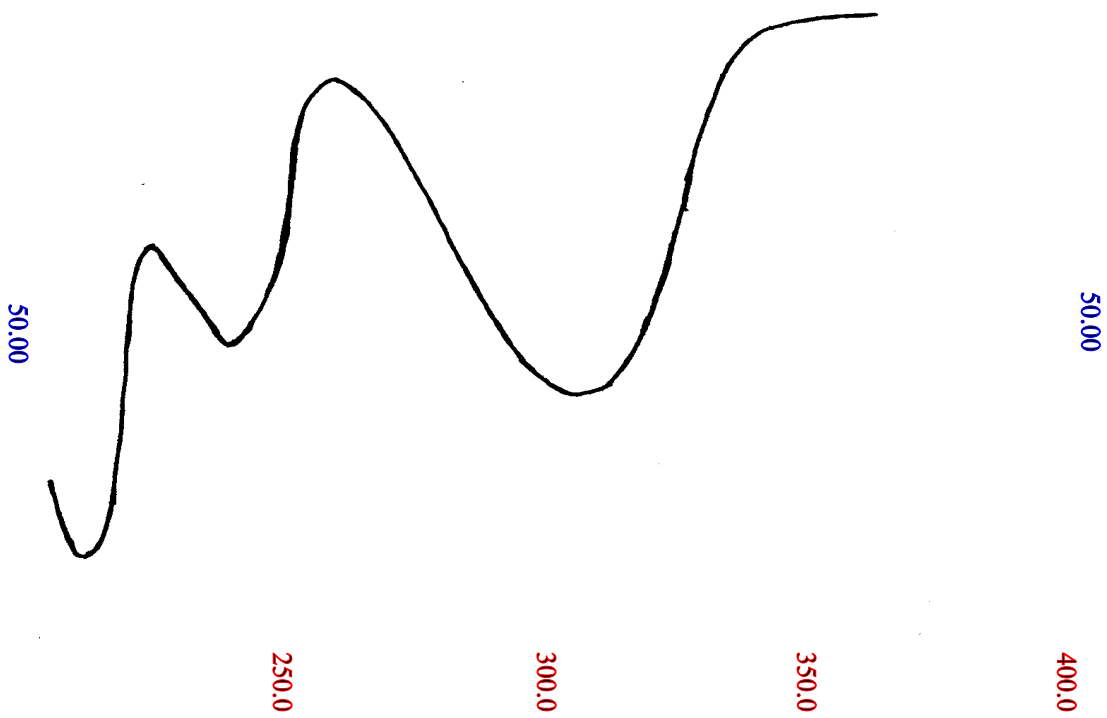
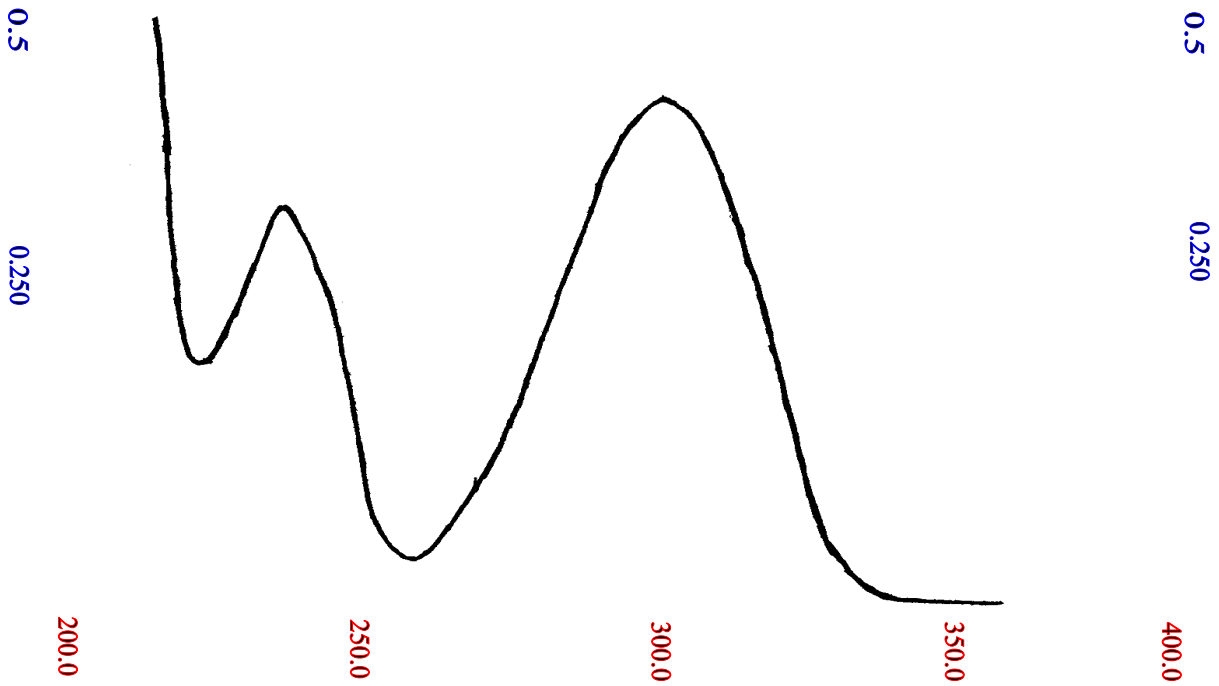
Clear Colorless Ceramide	Approx. 35%
Isopropylmyrisate	Approx. 40%
Peanut Oil	Approx. 30%
Cetoil	Approx. 40%
Paraffin oil (Mineral Oil)	Approx. 20%
Neem Oil	Approx.30%
Thulasi Ashwini Root Oil	in any proportion
Sesame Oil	in any proportion

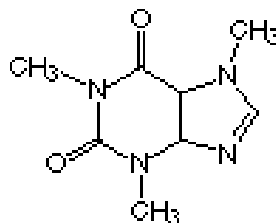
Coffee Oil has an excellent photostability. This UV-filter is used with 8% in an O/W- base as a cream to compare and ascertain the sun protective factor.

### **SPECIFICATION:**

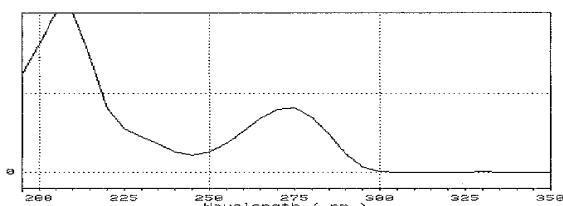
NAME :	Campo Coffee Oil
SYNONYM :	Coffee Arabica Oil Extract
PRODUCT # :	563.97
LATIN NAME :	Coffea Arabica
INCI/CTFA NAME :	Coffea Arabica Seed Extract
PARTS USED :	Seed
APPEARANCE :	Free flowing clear brownish tint liquid
ODOUR :	Slight characteristic of brazilian type of coffee smell
SPECIFIC GRAVITY :	0.835 – 0.999
At 20 deg.Cent	
<b><u>AVERAGE DOSAGE :</u></b>	5 - 6 %

The following graphs show the COFFEE OIL spectra  
**Coffee Oil**





## UV spectrum of caffeine



Retention time : 2.75min  
 Optimum wavelength : 210nm  
 Sensitiveness : 1.48ng  
 Absorbance / 100ng : 0.4738 abs.sec

### Apparatus and Analysis conditions

Mobile phase : (10mM HClO<sub>4</sub> + 10mM NaClO<sub>4</sub>470%) + (CH<sub>3</sub>CN30%)

Flow-rate : 1.0mL/min.

Column : FineSIL C18T (25cm x 4.0mm i.d.)

(monomeric ODS, particle size 5 x 10<sup>-6</sup> m ) (Shiseido).

Wavelength : 210-350nm.

Column temperature : 50c

880 PU LC pump (Jasco, Hachioji, Japan) System controller 801-SC

- Gradient device 880-02
- Detector MULTI-320
- Data processing system DP-L320/98(Jasco, Hachioji, Japan)  
(Time Accumulation 0.8sec.)

### Physical Properties

*Molecular Formula* : C<sub>8</sub>H<sub>10</sub>N<sub>4</sub>O<sub>2</sub>

*Molecular weight* : 194.19

*Chemical name* : 1,3,7-trimethylxanthine

*Properties* : soft, white crystal or powder. Non smell or Slight-Characteristic Coffee. Taste is slightly bitter.

*melting point* : 235-238c

*log P* : -0.07 ( Experimentally determined value ) 0.07 ( Calculated value )

*Ionization Constant • @pKa* : 0.6; 14.0

### Solubility :

Chloroform : easily soluble

Water, Ethanol : partially soluble

Ether anhydride : hardly soluble

Oral administration / 1day : 300-900mg

### References

COMPREHENSIVE MEDICAL CHEMISTRY

The Rationary Design, Mechanistic Study & Therapeutic Application of Chemical Compounds Volume 6 ( PERGAMON PRESS )

[Other Information]