	<b>TECHNICAL SPECIFICATIONS</b>	REVIEW: 03 <i>DATE: 01/2009</i>
	100% REFINED WINTERIZED SUNFLOWER OIL (HS-CODE: 15121990)	Page 1 of 3

**DESCRIPTION:**

A liquid oil suitable for baking and frying. For use in diet margarine, or bottled as a general purpose oil. Especially for products high in poly-unsaturated fatty acids.


**ORGANOLAPTIC CHARACTERISTICS**

Appearance:	Clear and brilliant at room temperature
Texture:	Liquid at 20°C
Taste – Smell:	Neuter (panel test)
Colour:	Pale yellow ((Max. 1.5 red, 15 yellow) (Lovibond, 5 ¼” cell))
Impurities:	Negative
Cold test:	Negative after 24 hours at 0°C
Shelf-life:	24 months from date of manufacture

**CHEMICAL AND PHYSICAL CHARACTERISTICS**

Analysis	Norms	Methods
Specific gravity at 20°C (g/ml)	0.918 – 0.923*	NF ISO 6883
Refractive index (n <sup>40</sup> <sub>D</sub> )	1.461 – 1.468* (indicative) ND	ISO 6320
Saponification value (KOH mg/1 g)	188 – 194*	AOCS Cd 3a-94
Iodine value (calculated)	118 – 141*	AOCS Cd 1c-85
Moisture (%)	< 0.07	NF ISO 662
Free Fatty Acid as Oleic Acid (%)	< 0.1	NF EN ISO 660
Alkalinity (ppm)	< 5	NF EN ISO 10539
Peroxyde value (meq/Kg)		
Tank delivery (at departure)	< 1	NF ISO 3960
Container delivery (Bottling)	< 2	NF ISO 3960
Phosphorus content (ppm)	< 5	NFT 60-227

*\*In accordance with the CODEX ALIMENTARIUS STAN 210 (Amended 2003,2005)*

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#### FATTY ACID COMPOSITION\*

Fatty acids	Carbon	Norms	Methods
Myristic	C14:0	< 0.2	Gaz Chromatography NFT EN ISO 5508
Palmitic	C16:0	5 – 7.6	
Palmitoleic	C16:1	< 0.3	
Stearic	C18:0	2.7 – 6.5	
Oleic	C18:1	14 – 39	
Linoleic	C18:2	50 – 74	
Linolenic	C18:3	< 0.3	
Arachidic	C20:0	0.1 – 0.6	
Gadoleic	C20:1	< 0.3	
Behenic	C22:0	0.3 – 1.5	
Erucic	C22:1	< 0.3	
Lignoceric	C24:0	< 0.5	

\*In accordance with the CODEX ALIMENTARIUS STAN 210 (Amended 2003,2005)

**Total Trans Fatty Acid < 1%**

#### AVERAGE NUTRITION FACTS

	Per 100 g
Energy	3700 kJ – 900 kcal
Protein (g)	0
Carbohydrates (g)	0
Total fat (g)	100
Saturated (g)	9 – 14
Monounsaturated (g)	19 – 38
Polyunsaturated (g)	52 – 69
Cholesterol (mg)	ND
Additives	None

#### HEAVY METALS\*

Analysis	Unit	Norms	Methods
Iron (Fe)	ppm	< 1.5	NF EN ISO 8294
Copper (Cu)	ppm	< 0.1	NF EN ISO 8294
Lead (Pb)	ppm	< 0.1	NF EN ISO 12193
Arsenic (As)	ppm	< 0.1	

\*In accordance with regulation CE 1881/2006 and its subsequent modifications and the CODEX-STAN 210 (Amended 2003,2005)

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#### PESTICIDES RESIDUES

Analysis	Unit	Norms	Methods
Organophosphorus	ppm	**	Gaz Chromatography + specific detection ECD-NDP
Organochlorine	ppm	**	

*\*\*In accordance with Regulation CE 396/2005 and its subsequent modifications – Analyses by survey*

#### POLYCYCLIC AROMATIC

Analysis	Unit	Norms	Methods
Benzo(a)pyrène (BaP)	ppb	< 2	ISO15302 : 1998 (E)

#### DIOXINS AND DIOXINS-LIKE PCB\*\*\*

Analysis	Unit	Limits
WHO-PCDD/F-TEQ	pg/g	0.75
WHO-PCDD/F-PCB-TEQ	pg/g	1.5

*\*\*\*In accordance with regulation CE 1881/2006 and its subsequent modifications*

#### MINERAL OIL

Analysis	Unit	Limits	Methods
Mineral Oil Hydrocarbon C10- C56	mg/kg	< 50 (quantification limit)	Intern method from ITERG (FEDIOL recommendation) or external laboratory

#### NOTE:

*This product does not require a Material Safety Data Sheet. It is a food grade product which is intended for edible uses. It is not a health, safety or toxic hazard. This specification is provided for information purposes only and should not be relied upon as a basis for product performance. It is suggested that you evaluate the product on at least a laboratory basis prior to its commercial usage. NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A SPECIFIC USE OR PURPOSE, EXPRESS OR IMPLIED, ARE MADE. These specifications are not intended to and shall not be construed to be instructions or suggestions for use which may be in violation of patent rights.*