

	PRODUCT SPECIFICATION	DOC 3-1 Red. 06/17.05.22
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PRODUCT NAME: REFINED SUNFLOWER OIL

Ingredients: 100 % sunflower oil

Origin: Bulgaria

Producer: KLAS OIL JSC

1. Organoleptic Characteristics:

Appearance at 20 °C	Clear liquid, without sediment
Color	Light yellow
Smell	Neutral or very slight sunflower seed smell, free from any foreign smell
Taste	Neutral or very slight sunflower seed taste, free from any foreign taste

2. Chemical and Physical Characteristics:

Parameter	Unit	Limit Value
Relative density at 20 °C	g/cm ³	0,918 – 0,923
Refractive index at 20 °C	-	1,4740 – 1,4760
Acidity (as oleic acid)	%	Max. 0,11
Moisture	%	Max. 0,05
Peroxide value	meqO ₂ /kg	At the manufacturer max 4 On the commercial network max 10
Lovibond color	5¼ Lovibond cell	Max 1.5 red / Max 15 yellow
Colour number (Iodine scale)	-	< 6
Insoluble impurities in petroleum ether	%	≤ 0,01
Phosphorus content	ppm	Max. 10
Iodine value	g I ₂ /100 g oil	118 - 141
Saponification value	mgKOH/g oil	188-194
Unsaponifiable matter	g/kg	≤ 15

3. Fatty Acids Composition:

Name of fatty acid	Symbol	Content as % of fatty acid*
Myristic acid	C14:0	ND - 0.2
Palmitic acid	C16:0	5.0 - 7.6
Palmitoleic acid	C16:1	ND - 0.3
Stearic acid	C18:0	2.7 - 6.5
Oleic acid	C18:1	14.0 - 39.4
Linoleic acid	C18:2	48.3 - 74.0
Linolenic acid	C18:3	ND - 0.3
Arachidic acid	C20:0	0.1 - 0.5
Gadoleic acid	C20:1	ND - 0.3
Behenic acid	C22:0	0.3 - 1.5
Lignoceric acid	C24:0	ND - 0.5

*As per Codex Standard 210-1999 for named vegetable oils / ND - undetectable, defined as $\leq 0.05\%$

4. Chemical contaminants:

Parameter	Unit	Limit Value
Erucic acid, including erucic acid bound in fat	g/kg	Max. 3
Lead (Pb)	mg/kg	Max. 0,1
Arsenic (As)	mg/kg	Max. 0,1
Copper (Cu)	mg/kg	Max. 0,1
Sum of dioxins (PCDD+PCDF)	pg/g oil	Max. 0,75
Sum of dioxins and PCBs	pg/g oil	Max. 1,25
Sum of PCB28, PCB52, PCB101, PCB138, PCB153 and PCB180	ng/g oil	Max. 40
Benzo(a)pyrene	$\mu\text{g}/\text{kg}$	Max. 2
Sum of benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene and chrysene (PAH 4)	$\mu\text{g}/\text{kg}$	Max. 10
Glycidyl esters of fatty acids, expressed as glycidol	$\mu\text{g}/\text{kg}$	Max. 1000
Sum of 3-MCPD and 3-MCPD fatty acid esters, expressed as 3-MCPD	$\mu\text{g}/\text{kg}$	Max. 1250
Residual Solvent	mg/kg	< 1

5. **Microbiological features:** Sunflower oil is not conducive to the growth of microorganisms (based on the characteristics of the product - high fat content, low water activity).
6. **Trans fatty acids, other than trans fatty acids, which occur naturally in animal fats** (Regulation (EC) No 1925/2006): max 2 g/100 g oil
7. **GMO statement** - The refined sunflower oils produced by Klas Oil JSC complies with the requirements of Article 9 of Regulation (EC) No 834/2007 prohibiting the use of GMOs.
8. **Allergens statement** - The refined sunflower oil produced by Klas Oil JSC does not contain any allergenic or intolerant substances or products listed in Annex II to Regulation (EU) No 1169/2011 of 25 October 2011.
9. **Pesticides Residue** - In accordance with maximum residue level (MRL) in Regulation (EC) No 396/2005 of 23 February 2005.
10. **Radiation status statement** - The content of radioactive elements in the refined sunflower oils, produced by Klas Oil JSC, is below the limits permitted by the European Union's regulations.
11. **Ionizing status** - Klas Oil JSC does not carry out activities for irradiation of foods with ionizing radiation.
12. **Vegetarian/Vegan status** - Our products are suitable for consumption by vegetarians and vegans. They are not of animal origin and at no stage of production and processing, has use been made of or has the product been supplemented with ingredients, components, processing aids or substances which are not additives but are used in the same way and with the same purpose as processing aids in either processed or unprocessed form that are of animal origin.
13. **Nutritional information:**

Nutritional information	Per 100 ml	Per 100 g
Energy value	3404 kJ / 828 kcal	3700 kJ / 900 kcal
Fats, of which:	92 g	100 g
- saturated fatty acids	11 g	12 g
- monounsaturated fatty acids	24 g	26 g
- polyunsaturated fatty acids	57 g	62 g
Carbohydrates	0 g	0 g
- from which sugars	0 g	0 g
Proteins	0 g	0 g
Salt	0 g	0 g

14. Packaging and labeling:

Primary packaging	Food grade PET containers and PE caps that maintain the integrity of the product to protect product, maintaining sanitary and organoleptic qualities intact and withstands the rigors of transport and handling. The packing is free from unwished physical and chemical contamination and meets the European legislation Reg. No 1935/2004 and 10/2011.
Secondary packaging	Corrugated paper box or packing that protects integrity of primary packages and withstand the rigors of transport and handling.
Labeling	In accordance with the requirements of Reg. No 1169/2011 of 25 October 2011 on the provision of food information to consumers.
Shelf life from manufacture	12 months
Minimum shelf life at delivery	10 months
Traceability data	See the production and expiration date printed on the bottle.

15. Storage and transport:

- Store in a dry and dark place at room temperature, keep out of direct sunlight. Storage facilities must comply with the requirements of REGULATION (EC) No 853/2004 of 29 April 2004 on the hygiene of foodstuffs.
- Transport in clean and dry vehicles at room temperature and protected from direct sunlight. The vehicles used for transport of foods must comply with the requirements of REGULATION (EC) No 853/2004 of 29 April 2004 on the hygiene of foodstuffs.