

***Spirulina Supreme* – Product technical specifications**

Product Details

Agency:	<i>Arthrospira</i> (= <i>Spirulina</i>) <i>platensis</i> Strain: SAG 257.80 (Peru)
Country of production:	Hellas
Customs Office Code:	2102209000
Producer:	Spirulina Maxima PC., Skoutari, Serres Greece 62100
Brief Specification:	Spirulina is an edible phytoplankton that thrives in tropical alkaline lakes. It is a species of microalgae that is classified in the Oscillatoriales Cyanobacteria (cyanobacteria). It has a long history of human consumption consumption (Aztecs America, Kanebu Africa) as it contains high amounts of proteins, beta-carotene, B vitamins, C-phycoyanin, sulfate polysaccharides, gamma-linoleic acid. It is intensively grown in meandering tanks, harvested by filtration, and dried in the sun before shredding and storing it. The final form of the product may be unprocessed flakes or powder, and tablets of compressed powder without excipients or other impurities.
Ingredients:	100 % Spirulina Algae
Suggested Use:	0.9-10 g per day. Prolonged use in large doses of high nutrient supplements requires medical advice.
Production process:	Spirulina is cultivated in meandering reservoirs of intensive crops protected in greenhouses, high water temperature, hyperalkalic pH, food-safe, filter harvested, washed, sun-dried, pulverized (when required) at medium temperature, food packaging.
Packaging:	Paper food packaging (doy packs) of varying flake, powder or tablet content.
Duration and expiration date:	3 years stored in a cool, dry and dark place. No cooling is required, it is protected from the sun.

Nutritional Information:

INGREDIENT	AVERAGE		METHODOLOGY
Energy per 100 g	1.627,58/389,00	kJ/kcal	calculated
Protein	67,10	%	Kjeldahl
Lipids	8,20	%	ISO 1443Q1973
Saturated FA	33,40	% FA	GC-MS ISO-12966 2
Monounsaturated FA	10,90	% FA	GC-MS ISO-12966 2
Polyunsaturated FA	55,80	% FA	GC-MS ISO-12966 2
Total Omega 3 FA	34,8	% FA	GC-MS ISO-12966 2
Total Omega 6 FA	21,00	% FA	GC-MS ISO-12966 2
Carbohydrates	11,60	%	calculated
Sugars	2,71		In-house HILIC-MS/MS
Edible fibers	3,80	%	AOAC 993.21
Ashes	8,05	%	gravimetric 850° C
Salt	3,71	%	Na equivalents (x2,5)
VITAMINS & PLANT NUTRIENTS			
phycocyanin	2,36	g/100 g	Yoshikawa & Belay
beta-carotene	143	mg/kg	HPLC-UV
vitamins E	61,90	mg/kg	LC-MS/MS
vitamins B1	20,6	mg/kg	LC-MS/MS
vitamins B2	8,94	mg/kg	LC-MS/MS
vitamins B3	122	mg/kg	LC-MS/MS
vitamins B6	2,46	mg/kg	LC-MS/MS
vitamins B12	200	µg/kg	LC-MS/MS
vitamins K1	0,70	mg/kg	LC-MS/MS
folic acid	<2,00	mg/kg	LC-MS/MS

INGREDIENT	AVERAGE	METHODOLOGY
FATTY ACIDS PROFILE (FA)		
C4:0	0,06 % TFA	GC-MS ISO-12966 2
C6:0	0,03 % TFA	GC-MS ISO-12966 2
C8:0	0,01 % TFA	GC-MS ISO-12966 2
C10:0	0,02 % TFA	GC-MS ISO-12966 2
C11:0	0,01 % TFA	GC-MS ISO-12966 2
C12:0	0,08 % TFA	GC-MS ISO-12966 2
C13:0	1,37 % TFA	GC-MS ISO-12966 2
C14:0	0,86 % TFA	GC-MS ISO-12966 2
C14:1	0,32 % TFA	GC-MS ISO-12966 2
C15:0	0,11 % TFA	GC-MS ISO-12966 2
C15:1	0,01 % TFA	GC-MS ISO-12966 2
C16:0	27,60 % TFA	GC-MS ISO-12966 2
C16:1 Omega 7 cis	4,22 % TFA	GC-MS ISO-12966 2
C17:0	0,55 % TFA	GC-MS ISO-12966 2
C17:1	0,63 % TFA	GC-MS ISO-12966 2
C18:0	1,71 % TFA	GC-MS ISO-12966 2
C18:1 Omega 9 cis	4,85 % TFA	GC-MS ISO-12966 2
C18:2 Omega 6 cis	12,10 % TFA	GC-MS ISO-12966 2
C18:3 Omega 3	32,70 % TFA	GC-MS ISO-12966 2
C18:3 Omega 6	7,15 % TFA	GC-MS ISO-12966 2
Saturated FA	33,40 % TFA	GC-MS ISO-12966 2
Monounsaturated FA	10,90 % TFA	GC-MS ISO-12966 2
Polyunsaturated FA	55,80 % TFA	GC-MS ISO-12966 2
T Omega 3 FA	34,80 % TFA	GC-MS ISO-12966 2
T Omega 6 FA	21,00 % TFA	GC-MS ISO-12966 2
T Omega 9 FA	4,85 % TFA	GC-MS ISO-12966 2



SPIRULINA MAXIMA PC.
 Production & Trading of Spirulina
 10th km of Serres-Nigrita, P.C. 62100,
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 hello@spiroulina-supreme.gr
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INGREDIENT	AVERAGE	METHODOLOGY
AMINO ACID PROFILE		
Alanine	7,85 %	LC-MS/MS
Arginine	4,39 %	LC-MS/MS
Aspartic Acid	13,31 %	LC-MS/MS
Valine	6,69 %	LC-MS/MS
Glutamic Acid	19,73 %	LC-MS/MS
Glycine	3,00 %	LC-MS/MS
Threonine	5,73 %	LC-MS/MS
Isoleucine + Leucine	5,84 %	LC-MS/MS
Histidine	2,22 %	LC-MS/MS
Cysteine	0,28 %	LC-MS/MS
Lysine	8,06 %	LC-MS/MS
Methionine	1,44 %	LC-MS/MS
Proline	5,66 %	LC-MS/MS
Serine	6,11 %	LC-MS/MS
Tryptophan	1,25 %	LC-MS/MS
Tyrosine	5,69 %	LC-MS/MS
Phenylalanine	2,76 %	LC-MS/MS
Minerals		
Calcium	230 ppm	ICP-MS
Iron	54,5 ppm	ICP-MS
Zinc	2 ppm	ICP-MS
Selenium	18 ppb	ICP-MS
Iodine	<1 ppm	ICP-MS



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Spirulina Supreme – Product Safety Statement

GENUINE

Spirulina supreme is 100% natural spirulina and contains no additives such as sugars, acids, dyes, preservatives, etc.

NON-GENETICALLY MODIFIED PRODUCT

Spirulina supreme is not genetically modified. Control procedures have been put in place to ensure that there is no accidental contamination with genetically modified materials or materials that will subsequently occur. We certify that the Spirulina supreme formulation is not labeled in accordance with EC Regulations 1829/2003 / EC and 1830/2003 / EC on genetically modified food and feed.

PESTICIDES FREE

Spirulina supreme is free of pesticides. During the manufacturing process the product and packaging materials are not exposed to pesticides or pesticide residues. Pesticides are not used in the production or storage areas.

RADIATION

The product has not been irradiated and complies with Regulation 1999/3 / EC.

BSE STATEMENT (Bovine Spongiform Encephalopathy)

Spirulina supreme is a herbal product and does not contain ingredients of animal origin nor has been contacted with any constituents of animal origin.

SOLVENT RESIDUES

Solvents are not used in the manufacturing process.

LEVEL OF ADVERSE SUBSTANCES

Spirulina Supreme's strictly controlled production process ensures that levels of unwanted substances (heavy metals, PAHs, mycotoxins, cyanotoxins, etc.) are below the limits set by EU legislation (Regulation 2073/2005, No 1881 / 2006 and successive amendments), including EFSA recommendations on food impurities.

ALLERGY STATEMENT

We confirm that Spirulina Supreme sold by Spirulina MAXIMA PC does not contain substances that cause allergies or intolerances as ingredients or the possibility of cross-contamination. The definition of allergens that may cause adverse reactions in susceptible persons is provided in Annex IIIa to Directive 2007/68 / EC.

ANIMAL TEST STATEMENT

Spirulina MAXIMA PC confirms that it does not carry out or perform animal testing for any products.

FOOD SAFETY

Factor	Acceptable Price	Method
Moisture	<7 %	gravimetric 105° C
TMC	<100.000 cfu/g	ISO 4833-1:2013
Molds	<200 cfu/g	ISO 21527-2
Yeasts	<200 cfu/g	ISO 21527-2
Colobacteria	απουσία cells/g	ISO 4831
<i>Salmonella</i>	απουσία cells/10g	AFNOR BIO 12/16-09/05
<i>Staphylococcus</i>	απουσία cells/g	ISO 6888-2
<i>Anaerobic thio-reducing bacteria</i>	<1000 cfu/g	ISO 15213:2003
<i>Clostridium perfringens</i>	<200 cfu/g	ISO 15213:2003
Insects / Bristles / etc.	απουσία parts/10g	AACC 28-44.01
Pesticides, etc.	απουσία ppm	GC-MS

HEAVY METALS

Factor	Acceptable Price	Method
As	<1 ppm	ICP-MS
Cd	<1 ppb	ICP-MS
Cr	<1 ppb	ICP-MS
Hg	<1 ppb	ICP-MS
Pb	<1 ppb	ICP-MS

Cyanotoxin	<i>Spirulina supreme</i>	LOD ($\mu\text{g/g}$)	LOQ ($\mu\text{g/g}$)	Method
<i>CYN</i>	N.D.	0,1	0,3	LC-MS/MS
<i>Anatoxin-a</i>	N.D.	0,3	0,9	LC-MS/MS
<i>[D-Asp3] MC-RR</i>	N.D.	0,2	0,6	LC-MS/MS
<i>MC-RR</i>	N.D.	0,1	0,3	LC-MS/MS
<i>NOD</i>	N.D.	0,2	0,6	LC-MS/MS
<i>MC-YR</i>	N.D.	0,4	1,3	LC-MS/MS
<i>MC-HtyR</i>	N.D.	0,7	2,0	LC-MS/MS
<i>[D-Asp3] MC-LR</i>	N.D.	0,4	1,1	LC-MS/MS
<i>MC-LR</i>	N.D.	0,4	1,3	LC-MS/MS
<i>MC-HiIR</i>	N.D.	0,6	1,9	LC-MS/MS
<i>MC-WR</i>	N.D.	0,6	1,7	LC-MS/MS
<i>MC-LA</i>	N.D.	0,3	0,9	LC-MS/MS
<i>MC-LY</i>	N.D.	0,6	1,8	LC-MS/MS
<i>MC-LW</i>	N.D.	0,4	1,3	LC-MS/MS
<i>MC-LF</i>	N.D.	0,5	1,6	LC-MS/MS
<i>BMAA</i>	N.D.	0,4	1,2	LC-MS/MS
<i>DAB</i>	N.D.	0,5	1,5	LC-MS/MS
<i>AEG</i>	N.D.	0,5	1,5	LC-MS/MS

Results below the detection limit (LOD) are reported as "N.D." (not detected).

Results higher than the detection limit (LOD) and lower than the quantification limit (LOQ) are reported as "LOQ".