



Product data sheet

Product name

Nannochloropsis Gaditana Powder

Product description

Nannochloropsis Powder is a highly pure, fine powder of the marine microalgae *Nannochloropsis Gaditana*. Nannochloropsis is a small single cell green microalgae species that is rich in essential polyunsaturated fatty acids, pigments and vitamins. A special cultivation process utilizing photobioreactors optimizes the growth conditions and ensures the high quality and pureness of the algae. Fresh cells are harvested year-round and deep frozen at temperatures below -50 Celsius directly after harvesting. The frozen product is subsequently freeze dried under strictly controlled conditions. This process safeguards the preservation of all essential constituents of the algae cells. The freeze dried cell mass is grinded to a fine powder and vacuum-packed immediately to ensure long shelf-life.

Taxonomic Classification

Nannochloropsis spp. is a unicellular green micro-algae species, taxonomically classified as:

- Chromophyta (Division);
- Ochrophyta (Phylum);
- Eustigmatophyceae (Class);
- Eustigmatales (Order);
- Monodopsidaceae (Family);
- Nannochloropsis (Genus);
- Spp. (Species).

Physical Properties

Appearance:	Fine Green Powder
Particle size:	90% < 250µm
Relative density (20°C):	0.5-0.6 kg per Litre
Moisture:	< 2%
Boiling point:	Not applicable
Melting point:	Not applicable
pH:	Not applicable
Odour:	Slight "Marine" odour
Solubility in water:	Easy to Suspend

Preservation and Microbiology

No preservatives have been added. Absence of unwanted other algae and low levels of microbes are obtained by maintaining high sanitary levels both during cultivation and processing. All cultivation medium used is purified by ultra-filtration, harvested cells are frozen immediately after harvesting and freeze-drying is performed under HACCP-conditions. Freeze-drying is used to maintain the natural chemical composition of the product. Powder is vacuum-packed in sanitary stand-up pouches directly after grinding and leakage is prevented by a double-seal.

COA

Test performed by Groen Agro Control The reported results refer only to the sample investigated

Analysis report

d.d. : 13-1-2017

- equal to ISO 4833 Aerobic bacterial counts 5.500.000* cfu/g
- equal to ISO 21528-2 Enterobacteriaceae <100 cfu/g
- equal to ISO 4832 Coliforms <100 cfu/g
- equal to ISO 6579 Salmonella n.a. /25g
- equal to ISO 16649-2 E. coli <100 cfu/g
- equal to ISO 11290-1 Listeria monocytogenes n.a. /25g
- equal to ISO 6888-1 Staphylococcus aureus <100 cfu/g
- equal to ISO 7932 Bacillus cereus <100 cfu/g
- own method AOAC997.02 Fungi/Yeasts <100 cfu/g
- conform ISO 13136 STEC/ EHEC n.a. /25g

Method

Sampling date 6-1-2017

not by GAC

nd = not detected

cfu = colony-forming units

MPN = most probable number

** = indicative value*

Nannochloropsis gaditana

Sample code : MHA170106279

Supplier LGem

Contaminants

Heavy metals not detectable

- Mercury less than 0.01 µg/g
- Cadmium less than 0.03 µg/g
- Lead less than 0.3 µg/g

Free of antibiotics

Free of pesticides

Free of synthetic colorants

Free of synthetic preservatives

Free of synthetic antioxidants

Nutritional Composition

Protein	50 ± 0.8 %
Lipids	29.4 ± 0.7 % of DW
Moisture	less than 2%
Minerals	10-15%
Sodium	0.9%
Chlorophyll a	1.5-3%
Chlorophyll b	0%
Total Carotenoids in powder	1.2-2%

Mineral Composition

Boron (B)	4.32 PPM
Calcium (Ca)	1320 PPM
Copper (Cu)	1.78 PPM
Ferrum/Iron (Fe)	151 PPM
Magnesium (Mg)	4740 PPM
Manganese (Mn)	11 PPM
Molybdenum (Mo)	<0.1 PPM
Potassium (K)	1.4 %
Sodium (Na)	0.93 %
Zinc (Zn)	26.2 PPM

*PPM = Parts Per Million = mg per kg dw

Lipid class composition

NL	30 ± 1 % of crude oil
GL	36.0 ± 0.8 % of crude oil
PL	34 ± 2 % of crude oil

Sterol content in lipids

Total Phytosterols	17 ± 1 mg/g oil
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Carotenoid content in lipids

Carotene	3.46 ± 0.03 mg/g oil
Diadinoxanthin	2.91 ± 0.06 mg/g oil
Violaxanthin	14.3 ± 0.3 mg/g oil
Zeaxanthin (Luteine)	3.37 ± 0.07 mg/g oil

Ω-3 Fatty acid content

ALA	0.26 ± 0.03 mg/g oil
SDA	0.30 ± 0.07 mg/g oil
EPA	167 ± 12 mg/g oil

Ω -6/ Ω -3 ratio (should be below 1)

n-6/n-3	± 0.25
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Fatty Acid Profile

Only FA > 1% are displayed

C14:0	5.40 ± 0.00 % of total FA
C16:0	18.37 ± 0.06 % of total FA
C16:1n-7	23.87 ± 0.06 % of total FA
C18:1n-9	3.80 ± 0.00 % of total FA
C18:2n-6	2.40 ± 0.00 % of total FA
C20:4n-6	4.70 ± 0.00 % of total FA
C20:5n-3	30.8 ± 0.1 % of total FA (EPA)

Ω -3 FA in lipid classes

in % of FA	Neutral lipids	Glycolipids	Phospholipids
C18:3 Ω -3 ALA	--	--	0.10 ± 0.02
C18:4 Ω -3 SDA	--	--	0.12 ± 0.01
C20:5 Ω -3 EPA	12.6 ± 0.2	46 ± 2	21.5 ± 0.2
C22:5 Ω -3 DPA	0.22 ± 0.03	--	--
C22:6 Ω -3 DHA	0.32 ± 0.03	--	--

Antioxidant Capacity of the lipids

TEAC = 18 ± 5 μmol Trolox eq./g oil

Storage and Shelf Life

Upon receipt unopened vacuum-sealed pouches can be stored at room temperature for at least 4 years. After opening of the vacuum packing the product can be kept in a cool dry place for at least 2 months. Pouches opened by cutting between the seal and the zip lock can easily be closed by closing the plastic zip lock manually. Well closed pouches can be kept in the refrigerator without attracting moisture.