Liquid Krill Hydrolyzate

General description:

Enzymatic hydrolyzate high in oligopeptides, produced 100% from Antarctic krill (*Euphasia superba*).

Use:

It provides a potent stimulating effect on feed intake and is a natural source of carotenoid pigments. Inclusion rates recommended as palatant between 0.5-5% of the formulation.

Physical appearance:

Appearance:	Low viscosity fluid orange liquid.
Smell:	A fresh zooplankton like to that of crustaceans
Flavor:	Natural marine flavor, like to shrimp, sweet.

Pigment Content:

Astaxanthin ester (*):	Range 15 – 30 mg/kg (ppm)
Free Astaxanthin:	< 3 mg/kg (ppm)

(*) Analyzed as esters of Astaxanthin and expressed as equivalent Astaxanthin.

Stabilization:

Stabilized with acids	pH < 5
Stabilized with salt	> 7%
Degrees Brix	> 25 °Bx

Standard Packaging:

Packaged in 20 liter tinette, IBC bin or 1000 liter Octobin.

Storage:

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Store in a cool, protected environment in closed containers with minimal presence of oxygen. Keep away from direct sunlight and heat.

Shelf life:

12 months from the date of production.

Microbiology:

Salmonella spp. (pres./abs., in 25 g)	Absence
Enterobacteriaceas (CPU/g)	< 300

TYPICAL COMPOSITIONAL ANALYSIS *(E. superba)*

(Depending on seasonal variation)

CRUDE PROTEIN (Nx6.25)	11 - 13%

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GRASA CRUDA	2 - 6%
ASH	3.5% MAX,
MOISTURE	80.0% MAX.
CRUDE FIBER	0.5% MAX.

TYPICAL ESSENTIAL AMINO ACID PROFILE

(as % of the sample)

Arginine (Arg)	**0.79**	**Histidina (His)**	**0.28**
Isoleucine (Ile)	**0.71**	**Leucina (Leu)**	**1.10**
Lysina (Lys)	**1.10**	**Methionine (Met)**	**0.41**
Serine (Ser)	**0.55**	**Threonine (Thr)**	**0.59**
Tryptophan (Trp)	**0.18**	**Valine (Val)**	**0.70**

(as % of the crude protein)

Arginine (Arg)	**6.17**	**Histidine (His)**	**2.19**
Isoleucine (Ile)	**5.55**	**Leucine (Leu)**	**8.59**
Lysine (Lys)	**8.59**	**Methionine (Met)**	**3.20**
Serine (Ser)	**4.30**	**Threonine (Thr)**	**4.61**
Tryptophan (Trp)	**1.41**	**Valine (Val)**	**5.47**

TYPICAL FATTY ACIDS PROFILE

(as g/100 g extracted fat)

Myristic acid	**C14:0**	**8.3**	**Palmitoleic acid**	**C16:1 n-7**	**5.8**
Palmitic acid	**C16:0**	**18.1**	**Oleic/Vaccenic acid**	**C18:1 n-9+n-7+n5**	**14.7**
Stearic acid	**C18:0**	**1.2**	**Eicosenoic acid**	**C20:1 n-9+n-7**	**0.7**
Arachquid acid	**C20:0**	**< 0.1**	**Cetoleic/Erucic acid**	**C22:1 n-11+n-9**	**0.5**

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Behenic acid	**C22:0**	**0.1**	**Nervonic acid**	**C24:1 n-9**	**< 0.1**
Sum Saturated Fatty Acids		**27.7**	**Sum Monoenoic Fatty Acids**		**21.7**

cis-9,12-hexadecadienoic acid	**C16:2 n-4**	**0.7**
cis-9,12.15-hexadecatrienoic acid	**C16:3 n-4**	**0.3**
Linoleic/Linolelaidic acid	**C18:2 n-6 (c+t)**	**1.1**
γ-Linolenic acid	**C18:3 n-6**	**0.1**
cis-11,14-Eicosadienoic acid	**C20:2 n-6**	**< 0.1**
cis-8,11.14-Eicosatrienoic acid	**C20:3 n-6**	**< 0.1**
Arachidonic acid	**C20:4 n-6 (ARA)**	**0.2**
Adrenic acid	**C22:4 n-6**	**< 0.1**
α-Linolenic acid	**C18:3 n-3**	**0.5**
cis-6,9,12,15-Octadecatetraenoic acid	**C18:4 n-3**	**1.3**
cis-11,14,17-Eicosatrienoic acid	**C20:3 n-3**	**0.1**
cis-8,11,14,17-Eicosatretaenoic acid	**C20:4 n-3**	**0.4**
cis-5,8,11,14,17-Eicosapentaenoic acid	**C20:5 n-3 (EPA)**	**14.2**
Heneicosapentaenoic acid	**C21:5 n-3**	**0.5**
cis-7,10,13,16,19-Docosapentaenoic acid	**C22:5 n-3 (DPA)**	**0.5**
cis-4,7,10,13,16,19-Docosahexaenoic acid	**C22:6 n-3 (DHA)**	**5.7**

Sum PUFA (n-4) fatty acids	**1.0**
Sum PUFA (n-6) fatty acids	**1.4**
Sum PUFA (n-3) fatty acids	**23.2**
Sum total-PUFA fatty acids	**25.6**
Sum EPA+DHA	**19.9**
Sum EPA+DPA+DHA	**20.4**
Sum identified fatty acids	**75.0**
Sum unidentified fatty acids	**6.2**

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omega-6/omega-3 ratio	**0.06**
omega-3/omega-6 ratio	**16.57**

TYPICAL LIPID CLASSIFICATION

(as g/100 g extracted fat)

Triacylglycerol	**37.0**
Diacylglycerol	**1.4**
Monoacylglycerol	**< 1.0**
Free Fatty Acids	**< 3.5**
Cholesterol	**0.9**
Cholesterol esters	**< 0.5**
Phosphatidyletanolamin	**1.3**
Phosphatidylinositol	**< 1.0**
Phosphatidylserin	**< 1.0**
Phosphatidylcholin	**28.0**
Lyso-Phosphatidylcholin	**4.6**
Total Polar Lipids	**33.7**
Total Neutral Lipids	**43.3**
Total Sum Lipids	**77.0**

TYPICAL Mw DISTRIBUTION PROFILE

(as % of water soluble peptides)

Mw-peptide > 20.000 Dalton	1,0
Mw-peptide 20.000-15.000 Dalton	0,1
Mw-peptide 15.000-10.000 Dalton	0,1
Mw-peptide 10.000-8.000 Dalton	0,1
Mw-peptide 8.000-6.000 Dalton	0,1
Mw-peptide 6.000-4.000 Dalton	0,3
Mw-peptide 4.000-2.000 Dalton	2,5
Mw-peptide 2.000-1.000 Dalton	8,7
Mw-peptide 1.000-500 Dalton	20,4

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Mw-peptide PM 500-200 Dalton	36,0
Mw-peptide (amino acids) < 200 Dalton	30,8
*Water soluble crude protein (g/100 g sample)	12,6

TYPICAL APPLICATIONS

- First feeding and juvenile diets for marine and freshwater species due to the contribution of essential marine phospholipids that are critical at this stage of the crop cycle.
- Entry diets for marine smolt.
- High replacement and breeder fattening diets.
- Post-treatment diets following an outbreak of disease.
- To improve the taste of oral treatments formulated with palatability bullet components.
- To enhance the flavor of feed, especially those formulated with a high protein content of plant origin.
- To enhance and complement the range of Essential Fatty Acids (EFA) in diets.
- To enhance and complement proteins and amino acids within diets.
- To enhance and complement trace minerals within diets.
- To enhance and complement the levels of marine phospholipids and pigment within diets.
- To provide an appetite stimulant / flavoring for fish under stress and boost feed intake.
- To provide an appetite stimulant / flavoring for farmed fish at low temperature.
- As a palatant in premium pet food.
- As a source of high digestibility amino acids and oligopeptides for first-feed animals.

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Information Source Raw Material:

Dehydrated Krill stabilized with antioxidants, produced by cooking, pressing, drying (vacuum dryers) of marine zooplankton (*Euphasia superba*). Produced on board the F / V Antarctic Endeavor (EU registration number 2505). Production area: Antarctic (capture area is AREA 48). For the krill resource, it works under the regulations of the CCAMLR (Commission for the Conservation of Living Antarctic Marine Resources). MSC (Marine Stewardship Council) certification.

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