

## SeaPro<sup>®</sup> HP

### Fish Protein Concentrate

SeaPro<sup>®</sup> HP is derived from the fresh cuttings of marine white fish processed for human consumption at inspected, domestic fish processing facilities. The raw material is cooked, deboned, partially de-oiled, and dried under high temperature – short time conditions. This ingredient is a concentrated source of highly digestible fish protein, provides a supplemental level of fish oil, is extremely low in ash and magnesium, and stabilized with natural antioxidants.

SeaPro<sup>®</sup> HP is formulated and blended to strict product specifications, and consistent in all aspects of nutrient content and quality. It is ideal for use in a variety of specialized animal feeds to improve protein and amino acid quality, and can be a critical source of slow-release nitrogen in fermentation reactions.

SeaPro<sup>®</sup> HP is a natural, sustainable feed ingredient. Fisheries targeting Pacific Whiting (*Merluccius productus*) and associated white fish species are the primary sources of our raw material. Harvest of these fisheries is conducted by Pacific Seafood Group, and all are certified “sustainable” by the Marine Stewardship Council.

SeaPro<sup>®</sup> HP is a product of the United States of America. It is traceable with documentation showing source and disposition of all raw material utilized in formulation and production.

## TECHNICAL DATA

### Guaranteed Analysis

Crude Protein (min)	76.5 %
Crude Fat (min)	8.5 %
Crude Fiber (max)	1.0 %
Ash (max)	5.5 %
Moisture (max)	10.0 %
Calcium (min/max)	0.5 / 1.1 %
Phosphorus (min)	0.7 %

### Freshness

Histamine	50 mg / kg meal
Total Volatile Nitrogen	110 mg N / 100 g meal

<b>Amino Acids</b>	<b>(% meal)</b>	<b>(g / 100 g protein)</b>	<b>(% digestible)</b>
Alanine	4.1	5.3	95.9
Arginine	5.6	7.3	88.4
Aspartic acid	7.3	9.5	93.5
Cystine	0.7	0.9	86.8
Glutamic acid	10.1	13.2	94.8
Glycine	3.4	4.5	N/A
Histidine	1.8	2.3	83.8
Isoleucine	3.7	4.8	96.1
Leucine	6.4	8.4	96.3
Lysine	6.6	8.6	85.7
Methionine	2.2	2.9	96.6
Phenylalanine	3.7	4.8	95.4
Proline	2.8	3.6	93.6
Serine	3.2	4.2	94.1
Taurine	0.2	0.3	N/A
Threonine	3.6	4.7	94.2
Tryptophan	1.2	1.6	99.7
Tyrosine	3.3	4.3	95.1
Valine	4.4	5.8	94.1
Pepsin Digestibility (0.0002% pepsin)			96.0

<b>Fatty Acids</b>		<b>(% meal)</b>	<b>(g / 100 g fat)</b>
Myristic	C 14:0	0.3	3.0
Palmitic	C 16:0	1.8	19.0
Palmitoleic	C 16:1	0.7	7.0
Stearic	C 18:0	0.5	5.0
cis-Oleic	C 18:1 n-9	2.4	25.0
cis-Linoleic	C 18:2 n-6	0.2	1.8
gamma-Linolenic	C 18:3 n-6	N/A	0.4
α-Linolenic	C 18:3 n-3	0.2	1.5
cis-11-Eicosenoic	C 20:1 n-9	0.2	2.5
cis-11,14,17-Eicosatrienoic	C 20:3 n-3	0.2	2.0
Arachidonic	C 20:4 n-6	0.2	1.5
Eicosapentaenoic (EPA)	C 20:5 n-3	1.2	12.3
Erucic	C 22:1 n-9	0.1	1.5
Docosahexaenoic (DHA)	C 22:6 n-3	1.1	12.0
Total omega-3		2.8	28.5
Total omega-6		0.4	2.5

## **Fat Stability**

Preserved with mixed tocopherols 1250 ppm  
Peroxide Value 8.5 mEq / kg fat

## **Minerals (% meal)**

Calcium 0.8  
Phosphorus 0.9  
Potassium 0.5  
Sodium 0.4  
Sulfur 0.9  
Magnesium 0.12

## **(mg / kg meal)**

Iron 300  
Zinc 100  
Aluminum 30  
Copper 5  
Manganese 6  
Chromium 1  
Vanadium BDL  
Cadmium BDL  
Lead BDL  
Cobalt BDL  
Nickel BDL  
Molybdenum BDL

## **Vitamins (IU / kg meal)**

Vitamin A 86,500  
Vitamin D 1,500  
Vitamin E N/A

## **Microbial Analysis**

Aerobic Plate Count (APC) 100,000 cfu / g  
Salmonella Negative (org / 25 g)

## **Product Characteristics**

Color	Light brown
Odor	Mild fish
Physical	Free-flowing, 100% through 1.52 mm screen
Density	Approximately 22 - 26 lbs / ft <sup>3</sup>
pH	7.0 – 7.5
Storage	Store in a cool, dry place in original packaging
Stability	6 months when appropriately stored

## **Packaging**

1,800 lb bulk bags

## **AAFCO Definition**

Fish Protein Concentrate

## **Manufacturer**

BioOregon Protein, Inc.

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## **Technical Inquiries**

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\*Values for freshness, amino acids, fatty acids, peroxide, minerals, vitamins, microbial analysis and product characteristics are typical values.