

SeaPro™ HP

De-Boned Fish Protein Concentrate

SeaPro™ HP is a de-boned, high-protein, low-ash fish protein concentrate derived from fresh cuttings of marine whitefish and related species harvested and processed for human consumption. All processing is domestic and shore-based. All facilities are federally inspected. Commercial fisheries targeting Pacific Whiting (*Merluccius productus*) and ground fish species on the West Coast of the United States conform to Marine Stewardship Council (www.msc.org) standards and reflect our “Sustainability Mission” to promote socially and ecologically responsible marine resource management practices worldwide. Utilizing only fish cuttings from established marine fisheries managed as sustainable natural resources is the best way to ensure our product is wholesome, renewable and consistently available.

SeaPro™ HP is a unique, consistent feed ingredient. Product specifications do not vary seasonally and each production lot is formulated and blended to standard nutrient levels. Our ingredient is a concentrated source of highly digestible fish protein, is extremely low in ash, and provides a supplemental level of omega-3 docosahexaenoic (DHA) and eicosapentaenoic (EPA) fatty acids. It is stabilized with natural antioxidants. This premium product has application for improving feed protein quality; and validating flavor, label and natural claims.

SeaPro™ HP is an ideal protein source for supporting microbial growth in fermentation processing. The meal is extensively de-boned and finely screened to reduce particle size and improve process incorporation. Most important, all protein is in its natural, complex structure (no hydrolysis) allowing for slow release of nitrogen and control of reaction rate and heat.

SeaPro™ HP is a product of the United States of America. It is traceable with documentation showing source and processing of raw material utilized in production and final product formulation. Our company benefits from vertical integration within a human seafood company, Pacific Seafood Group, through access to their electronic tracking of fish catch, landings and processing; and the subsequent disposition of fresh cuttings. Pacific Seafood Group maintains strict quality standards based on scientifically-derived FSMA/HACCP systems at all our locations to ensure that the product you receive is the highest quality.

Customers are always welcome to visit our facilities and review our practices. Our definition of excellence, “*consistently doing your best and always striving to do better*”, demonstrates our commitment to providing a traceable, sustainable and wholesome product to our customers and yours.

Guaranteed Analysis

Crude Protein (min)	76.5 %
Crude Fat (min)	8.5 %
Crude Fiber (max)	1.5 %
Ash (max)	5.5 %
Moisture (max)	10.0 %
Calcium (min/max)	0.5 / 1.0 %
Phosphorus (min)	0.7 %
Salt (max)	1.5 %

Amino Acids	(% meal)	(g / 100 g protein)	(% digestible)
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	6.9	8.9	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

Protein Digestibility	(% protein)
Pepsin Digestibility (0.0002% pepsin)	96.0

Fatty Acids		(% meal)	(g / 100 g fat)
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

Freshness

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

Fat Stability

Preserved with mixed tocopherols	1250 ppm
Peroxide Value	10.0 mEq / kg fat

Minerals (% meal)

Calcium	0.8
Phosphorus	0.9
Potassium	0.5
Sodium	0.4
Sulfur	0.9
Magnesium	0.16

(mg / kg meal)

Iron	250
Zinc	100
Aluminum	30
Copper	4
Manganese	5
Chromium	1
Vanadium	BDL
Cadmium	BDL
Lead	1
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	100,000 cfu / g
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Product Characteristics

Color	Light brown
Odor	Mild fish

Physical	Free-flowing, 100% through 1.52 mm screen
Density	Approximately 22 - 26 lb / ft ³
pH	7.0 – 7.5
Storage	Store in a cool, dry place in original packaging
Stability	9 months when appropriately stored

Packaging 1,500 lb or 1,800 lb bulk bags

AAFCO Definition Fish Protein Concentrate, Whitefish Meal, or Fish Meal

Certification Canada Export

Processing Statements

Allergen: This product contains fish and is processed in a facility that processes crustacean shellfish.
This product is not intended for human consumption.

Typical Values

The value for mixed tocopherols is a residual and typical content for the product at the time of shipping.

The value for peroxide is a typical value for the product at the time of shipping.

The values for freshness, amino acids, fatty acids, minerals, vitamins, aerobic plate count, and product characteristics are typical and expected.

Manufacturer

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