

## Fish Bone Meal

### For Further Manufacture of Feed

Fish Bone Meal 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 and the bone is separated and dried under high temperature – short time conditions. This ingredient is a concentrated source of organic minerals, and supplies a supplemental level of protein and oil. No additives are utilized for processing or preservation.

Fish Bone Meal is a natural, sustainable 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 are certified “sustainable” by the Marine Stewardship Council.

Fish Bone Meal 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)	37.0 %
Crude Fat (min)	2.0 %
Crude Fiber (max)	1.0 %
Ash (max)	50.0 %
Moisture (max)	10.0 %
Calcium (min/max)	13.5 / 15.5 %
Phosphorus (min)	7.0 %

Amino Acids	(% meal)	(g / 100 g protein)
Alanine	3.1	7.7
Arginine	3.3	8.1
Aspartic acid	2.8	7.0
Cystine	n.d.	n.d.
Glutamic acid	4.3	10.7
Glycine	6.3	15.6

Histidine	0.5	1.4
Isoleucine	0.9	2.3
Leucine	1.6	4.0
Lysine	1.6	4.0
Methionine	0.9	2.3
Phenylalanine	1.1	2.8
Proline	3.3	7.9
Serine	1.8	4.4
Threonine	1.3	3.3
Tryptophan	n.d.	n.d.
Tyrosine	0.7	1.9
Valine	1.2	3.0

**Minerals** (% meal)

Calcium	15.0
Phosphorus	8.0
Potassium	0.4
Sodium	0.6
Sulfur	0.4
Magnesium	0.3

(mg / kg meal)

Iron	200
Zinc	75
Boron	30
Manganese	25
Copper	12
Barium	7
Chromium	3
Nickel	1
Arsenic	BDL
Cadmium	BDL
Cobalt	BDL
Lead	BDL
Mercury	BDL
Molybdenum	BDL
Selenium	BDL
Silver	BDL

**Microbial Analysis**

Aerobic Plate Count (APC) < 50,000 cfu / g

## **Product Characteristics**

Color	Light brown
Odor	Mild fish
Physical	Free-flowing
Density	30 – 35 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 Bone Meal

## **Manufacturer**

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## **Technical Inquiries**

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June, 2015

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