



Omega-7 Palmitoleic 500

Product Name:

AlaskOmega® Omega-7 Palmitoleic 500

Product Code: 300004

AlaskOmega® C16:1 Palmitoleic Acid Omega-7 concentrates are made by Organic Technologies, a family owned and operated company since 1981. Our sustainable Omega-7 concentrates are manufactured at our cGMP refinery in Eastern Ohio.

Exceptionally Pure

- Refining process results in an extremely pure and fresh tasting oil and removes all traces of fish odor or flavor.
- Full spectrum of laboratory testing meets or exceeds GOED Voluntary Monograph for trace impurities.

Highly Potent

- AlaskOmega Omega-7 Palmitoleic 500 has a minimum of 50% Omega-7 content, up to 5x more potent than other sources of omega-7, including sea buckthorn berry oil (8.9% - 31%).⁽¹⁾
- Highly concentrated C16:1 Palmitoleic Acid Omega-7 allows for delivery of higher Palmitoleic acid label claims, or use of smaller capsule sizes, versus other unconcentrated sources.

Truly Sustainable

- Our fish oils are sourced from a truly sustainable fishery. Certified by the MSC since April 2005, the Alaska Pollock fishery has been responsibly managed for over 35 years.



Vertical. Reliable.

- Our long-term supply partnerships ensure our Omega-7 concentrates are vertically integrated back to the source. With deep roots in manufacturing health and nutrition products, Organic Technologies has been developing innovative solutions for our customers for over 30 years.

(1) J Agric Food Chem. 2001 Apr;49(4):1939-47. Fatty acid composition of lipids in sea buckthorn (*Hippophaë rhamnoides* L.) berries of different origins. Yang B1, Kallio HP.

Quality Standards:

AlaskOmega is made by Organic Technologies at an FDA registered NSF certified facility under cGMPs for dietary supplements.



GMP Registered
www.nsf.org

Description:

Concentrated Omega-7 Fish Oil Ethyl Esters, bright and clear, colorless to pale yellow oily liquid

Country of Origin:

Manufactured in the USA from USA wild-caught fish
FEI Approval No. - 1000122503

Ingredients:

Concentrated Fish Oil Omega-7 Ethyl Esters, IP certified natural mixed tocopherols (Natural Vitamin E)

Species:

USA wild caught Alaska Pollock (*Theragra chalcogramma* or *Gadus chalcogrammus*).

Description	Specification	Method
C16:1 Palmitoleic Acid as EE ¹	500 mg/g min	QC-193C
C16:0 Palmitic Acid EE ¹	150 - 350 mg/g typical	QC-193C
Appearance	Bright and clear, colorless to pale yellow oily liquid	QC-529
Taste and Odor	Bland, characteristic	QC-304B
Color	4 Gardner max	QC-536
Acid Value, mg KOH/gm	1.0 max	AOCS Cd 3d-63
Anisidine Value	5 max	AOCS Cd 18-90
Peroxide Value, meq/kg	1.0 max	AOCS Cd 8b-90
Total oxidation, TOTOX (2 x Peroxide Value + Anisidine Value)	5 max	-
Cholesterol	0.1% max	QC-186K
Oligomers and partial glycerides	7.0% max	QC-816

¹ EE - Ethyl Ester

Package Sizes Available:

MSC Certified	Size
300004 - 180 kg	55 gal. lined tighthead steel drum
300004 - 25 kg*	8 gal. lined tighthead steel drum

*Additional lead time may apply.

Omega-7 Formulation Suggestions & Supporting Researchⁱ

C16:1 Palmitoleic Acid Omega-7 has been studied for its potential benefit towards many health applications, including insulin sensitivity, antimicrobial effects, moisture replenishment of mucosal membranes, anti-aging benefits for skin, hair and nails, and for burn and wound care. Following is a selection of human and animal studies supporting selected health applications for Palmitoleic acid Omega-7.

Insulin Sensitivity

There has been strong scientific interest in circulating palmitoleic acid levels and its potential roles in insulin sensitivity and diabetes.

- In a rodent model, rat muscle cells exposed to palmitoleic acid improved insulin sensitivity and showed a 2-fold increase in skeletal muscle glucose disposal (e.g., glucose uptake) while exposure to palmitic acid induced insulin resistance, an opposite effect.ⁱⁱ
- In obese, insulin-resistant type 2 diabetic mice, feeding of palmitoleic acid improved the diabetic condition with improved insulin sensitivity, less body weight gain, less fat accumulation in the liver, and decreases in glucose and triglyceride levels compared to placebo.ⁱⁱⁱ
- Investigation of circulating palmitoleic acid levels and its potential role in insulin sensitivity in humans showed palmitoleic acid levels were positively correlated with insulin sensitivity at baseline, and circulating levels of palmitoleic acid and insulin sensitivity increased post- intervention.^{iv}

Cell Tissue, Mucus Membranes and Wound Care

Palmitoleic acid Omega-7 has shown positive results when used topically for wounds, burns, ulcers, and other skin damage, and also as a suppository for mucus membrane infections in the vagina and rectum.

- In tests to determine antimicrobial activity in human (skin) sebum, palmitoleic acid was shown to be the most active antimicrobial fatty acid component. Palmitoleic acid, both natural and synthesized, was found to be the most active lipid in sebum to block adherence of *Candida albicans* when tested on the pig stratum corneum.^v
- Palmitoleic acid in combination with ethanol (<15%) showed synergistic antibacterial activity against gram-negative bacteria (e.g., *E coli*) and other MRSA (methacillin-resistant strains of *S. aureus*) strains. In several tests, the palmitoleic acid + ethanol combination proved more effective than mupirocin, a topical gram-positive anti-microbial agent.^{vi}
- Palmitoleic acid has been shown to support cell tissue and wound healing. A clinical controlled study testing the therapeutic topical effects of omega-7 Sea Buckthorn (SB) fruit oil on burns in 151 patients had significantly less exudate, less pain, less swelling and faster skin cell regeneration and tissue healing than Vaseline treatment.^{viii}
- A randomized, clinical trial designed to study the effect of consuming capsuled omega 7 (SB oil) on symptoms of vaginal dryness reported beneficial effects: improvements in vaginal health (epithelial integrity) were measured among the omega-7 oil group; a decline was measured in placebo group.^{vii}

Skin & Anti-Aging

Omega-7 is a natural component of skin and has been shown to nourish the skin when taken orally if adequate quantities are consumed. It has also shown useful for systemic skin problems, such as atopic dermatitis.

- A DBPC trial evaluated the effect of omega-7 (SB seed oil versus pulp oil) on atopic dermatitis. After four months, there was significant improvement in dermatitis [via SCORAD] in the SB pulp oil and placebo groups but not in the seed oil group. Plasma phospholipid levels of palmitoleic acid increased significantly in the subjects consuming the omega-7 SB pulp oil.^{ix, x}
- A study comparing the effects of two delivery forms of SB oil (capsules vs. crème) on mature skin reported beneficial effects that reduced signs of skin aging. Both products significantly improved skin hydration and elasticity. The sea buckthorn capsules also reduced skin roughness, and measures of wrinkles and fine lines; the cream did not show these effects.^{xi}

ⁱ G. Vannice, 2014. Palmitoleic Acid: An Independent Review of the Scientific Literature (Internal Document)

ⁱⁱ Dimopoulos N, Watson M, et al. Differential effects of palmitate and palmitoleate on insulin action and glucose utilization in rat L6 skeletal muscle cells. *Biochem J* 2006;399(3):473-481.

ⁱⁱⁱ Yang Z-H, Miyahara H, Hatanaka A. Chronic administration of palmitoleic acid reduces insulin resistance and hepatic lipid accumulation in KK-Ay mice with genetic type 2 diabetes. *Lipids Health Dis* 2011;10:120-128.

^{iv} Stefan N, Kantartzis K, et al. Circulating palmitoleate strongly and independently predicts insulin sensitivity in humans. *Diabetes Care* 2010;33(2):405-407.

^v, ^{vi} Wille JJ, Kydonieus A, Palmitoleic acid isomer (C16:1 delta6) in human skin sebum is effective against gram-positive bacteria. *Skin Pharmacol Appl Skin Physiol* 2003;16(3):176-187.

^{vii} Wang ZY, Luo XL, et al. Management of burn wounds with Hippophae rhamnoides oil. *Nan Fang Yi Ke Da Xue Xue Bao* 2006;26(1):124-125.

^{viii} Larmo PS, Yang B, et al. Effects of sea buckthorn oil intake on vaginal atrophy in postmenopausal women: A randomized, double-blind, placebo-controlled study. *Maturitas* 2014;79(3):316-321.

^{ix} Yang B, Kalimo KO, et al. Effects of dietary supplementation with sea buckthorn seed and pulp oils on atopic dermatitis. *J Nutr Biochem* 1999;10(11):622-630.

^x Yang B, Kalimo KO, et al. Effect of dietary supplementation with sea buckthorn (*Hippophae rhamnoides*) seed and pulp oils on the fatty acid composition of skin glycerophospholipids of patients with atopic dermatitis. *J Nutr Biochem* 2000;11(6):338-340.

^{xi} Yang B, Bonfigli A, et al. Effects of oral supplementation and topical application of supercritical CO2 extracted sea buckthorn oil on skin aging of female subjects. *J Appl Cosmetol* 2009;27:1-13.