

## Hemp Seed Oil 1000 mg

### TECHNICAL SUMMARY

Hemp Seed Oil Softgels are a convenient way to get your essential fats. Hemp seed oil has a unique and impressive fatty acid profile that consists mainly of the omega-6 essential fatty acids, linoleic acid and gamma-linolenic acid (GLA), and the omega-3, alpha-linolenic acid. The omega-6 to omega-3 ratio of hemp oil is approximately 3:1.

**Composition:** In addition to its unique fatty acid composition, hemp seed oil is known to possess naturally occurring bioactive compounds at various concentrations such as terpenes, chlorophyll, flavonoids, beta-sitosterol, and some fat soluble vitamins.†

**Botanical Name:** *Cannabis sativa*

**Allergen and Additive Disclosure:** Not manufactured with yeast, wheat, gluten, soy, corn, milk, egg, fish, or shellfish ingredients. Produced in a GMP facility that processes other ingredients containing these allergens.

**Delivery Form:** Softgel

### ROLE AS NUTRIENT/FUNCTION

Hemp seed oil is comprised of approximately 75% essential fatty acids. Linoleic acid (LA) and alpha-linolenic acid (LNA) are its major omega-6 and omega-3 polyunsaturated fatty acids (PUFA), with LA concentrations ranging from 52-62% of total fatty acid composition while LNA concentrations range from 12-23%. The additional presence of gamma-linolenic acid (GLA) and stearidonic acid (SDA) enhances its nutritional value.

In hemp seed oil, the ratio of omega-6/omega-3 is typically close to an ideal value for their efficient metabolic conversion to arachidonic acid (AA; 20:4ω6) from LA, and LNA to EPA (20:5ω3) and DHA (22:6ω3) via delta-6 desaturase and other enzymes. Epidemiologic data from traditional Mediterranean and Japanese diets suggest that the optimal ratio is between 2:1 and 3:1 for optimal health.

Hemp seed oil is also known to possess additional naturally occurring compounds at various concentrations such as terpenes, chlorophyll, flavonoids, beta-sitosterol, and fat soluble vitamins.†

### NATUROKINETICS®

**Liberation:** Hemp seed oil softgels disintegrate within 60 minutes using a USP-validated disintegration in water test.

**Absorption:** The absorption of fatty acids present in hemp seed oil is expected to be similar to equivalent fatty acids present in the diet. The absorption of other compounds present in hemp seed oil is complex as it depends on the physicochemical properties of each compound.

**Distribution:** The distribution of fatty acids present in hemp seed oil is expected to be similar to equivalent fatty acids present in the diet. The distribution of other compounds present in hemp seed oil is complex as it depends on the physicochemical properties of each compound.

**Metabolism:** The metabolism of fatty acids present in hemp seed oil is expected to be similar to equivalent fatty acids present in the diet. The

## Supplement Facts

Serving Size 1 Softgel

	Amount Per Serving	% Daily Value
Calories	10	
Total Fat	1 g	1%*
Organic Hemp Seed Oil ( <i>Cannabis sativa</i> ) (Cold Pressed, Hexane Free)	1 g (1,000 mg)	†

\* Percent Daily Values are based on a 2,000 calorie diet.  
† Daily Value not established.

**Other ingredients:** Softgel Capsule [bovine gelatin (BSE-free), glycerin, water] and d-alpha Tocopherol (from sunflower oil).

- **Nutritional Oil**
- **Essential Fatty Acids**

**SUGGESTED USAGE:** Softgel Capsule [bovine gelatin (BSE-free), glycerin, water] and d-alpha Tocopherol (from sunflower oil).

metabolism of other compounds present in hemp seed oil is complex as it depends on the physicochemical properties of each compound. It also depends on the liver function of individuals ingesting these compounds.

**Elimination:** The elimination of fatty acids metabolites from hemp seed oil is expected to be similar to equivalent fatty acids present in the diet. The elimination of other compounds present in hemp seed oil is complex as it depends on the metabolic pathway each compound found in hemp seed oil.

### CLINICAL VALIDATION

- In a 4-week randomized, double-blind, crossover study in 14 healthy individuals consuming 30 mL/d (2 tbsp.) cold-pressed hemp seed oil or flax seed oil, hemp seed oil supplementation resulted in significantly higher proportion of LA and GLA in serum cholesteryl esters and triglycerides vs. flax seed oil supplementation. (p<0.001)
- In a 8-week randomized, single-blind, crossover study in 20 adults consuming 30 mL/d cold-pressed hemp seed oil or olive oil, hemp seed oil supplementation resulted in significantly higher proportion of LA, LNA and GLA in all lipid fractions tested (cholesteryl esters, triglycerides, and phospholipids).

### SAFETY INFORMATION

**Tolerability:** Hemp seed oil is typically well tolerated. Some gastrointestinal discomfort has been rarely described after consumption of hemp seed oil.

**Contraindications:** Hemp seed oil as a long history of use as a food, and this product is tested to be below 10 ppm THC. There are no contraindications for using this product.

## INTERACTIONS

**Drug Interactions:** Theoretically, based on pre-clinical data, hemp seed oil might interact with platelet aggregation; however, no clinical report of interaction with anticoagulant medication has been published and in a clinical study. It has been reported that 30 mL/d hemp seed oil had no impact on hemostatic factors (D-dimer, fibrinogen, FVIIa, and PAI-1 activity).

**Supplement Interactions:** None known.

**Interaction with Lab Tests:** None known.

## STORAGE

This product should be stored in a cool, dark place in its original container.

<sup>†</sup>This information is based on the typical hemp seed oil composition profile as found in scientific literature. The hemp seed oil present in this product is not regularly tested for terpenes, chlorophyll, flavonoids, beta-sitosterol, vitamins, or cannabinoids.