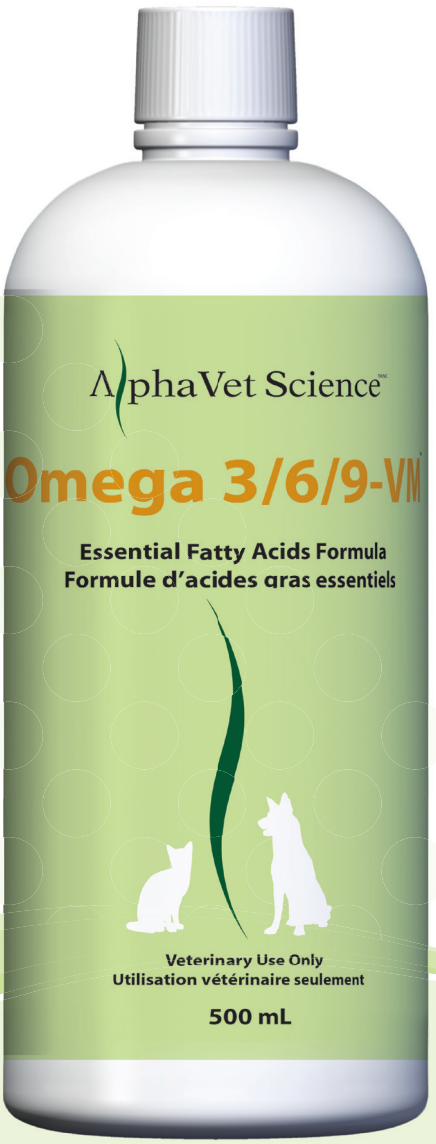
AlphaVet Science™/MC



Just Natural Science™

La science au naturel, simplement™

AlphaVet Science™

Omega 3/6/9-VM™

Omega 3/6/9-VM™ is a synergistic blend of essential fatty acids consisting of ω3, ω6, and ω9 derived from *Scomber scombrus*, *Sardina pilchardus, Engraulis ringens, Linum usitatissimum,* and *Borago officinalis* with mixed tocopherols.

INDICATIONS
- Dermatitis
- Dry and dull pelage
- Health maintenance
- Wound healing

INGREDIENTS ACTIONS
- Anti-allergic
- Anti-inflammatory
- Cardioprotective
- Dermotropic
- Immunomodulation
- Renoprotective

ADMINISTRATION Oral

DOSAGE

10 - 50 lbs	10 mL (2 teaspoon) daily.
> 50 lbs	15 mL (1 tablespoon) daily.

STORAGE Refrigerate after opening. Keep bottle cap tightly closed when not in use.

PACKAGING 500 mL/bottle

Omega 3/6/9-VM™ FORMULA

1 teaspoon (5 mL) contains:

Omega-3	1500 mg
Eicosapentaenoic Acid	(300 mg)
Docosahexaenoic Acid	(200 mg)
α-Linolenic Acid	(1000 mg)
Omega-6	1250 mg
Omega-9	850 mg
Mixed Tocopherols	100 IU

Omega 3/6/9-VM™ is manufactured under strict GMP standards and contains no dairy, yeast, wheat or gluten.

Essential Fatty Acids

Dogs and cats, among other species, are unable to synthesize essential fatty acids such as omega-6 and omega-3 fatty acids (Davenport, 2006). Essential fatty acids are important for proper cellular development and reproductive, gastrointestinal, and renal functions, and maintenance of healthy skin. Diets deficient in essential fatty acids can result in multiple reproductive and cutaneous disorders in adult animals, as well as a failure to thrive in young growing animals (Bauer, 2006; Davenport, 2006). Preliminary studies in dogs and cats with essential fatty acids have shown promise in several clinical conditions.

Areas include:

- Controlled studies on the effects of essential fatty acids on skin and hair coat condition of dogs and cats (Popa *et al.*, 2011; Abba *et al.*, 2005; Mooney *et al.*, 1998; Logas & Kunkle, 1994; Harvey, 1993; Bond & Loyd, 1992a, 1992b).
- Effects in maintaining lean body mass (Szabo *et al.*, 2003; Szabo *et al.*, 2000; Ibrahim *et al.*, 2000).
- Use of omega-3 fatty acids in arthritis, inflammatory bowel diseases and other progressive inflammatory disorders (Roush *et al.*, 2010; Fritsch *et al.*, 2010; Roush *et al.*, 2010; LeBlanc *et al.*, 2008).
- Studies on omega-3 fatty acids and neurological development (Heinemann & Bauer, 2006; Waldron *et al.*, 1998).
- Utility of omega-3 fatty acids in aging and cognitive function (Taha *et al.*, 2009; Hall *et al.*, 2005; Wander *et al.*, 1997).
- Benefit of omega-3 fatty acids in aggression in dogs and cats (Re *et al.*, 2008).
- Role of omega-3 fatty acids in mitigating insulin sensitivity, obesity, and metabolic syndromes (Mazaki *et al.*, 2011; Wilkins *et al.*, 2004; Szabo *et al.*, 2003; Szabo *et al.*, 2000; Ibrahim *et al.*, 2000).
- Studies on cardiovascular diseases and cardioprotective actions of essential fatty acids (Mayyas *et al.*, 2011; Ramadeen *et al.*, 2010; Freeman, 2010; Laurent *et al.*, 2008; Leaf *et al.*, 2005; Pakala *et al.*, 1999; Billman *et al.*, 1999; Freeman *et al.*, 1998).
- Relationship between omega-3 fatty acids and cancer prevention and therapy (Ogilvie *et al.*, 2000; Williams, 1998).
- Involvement of omega-3 fatty acids in immune system (Bauer, 2007; Kearns *et al.*, 1999; Wander *et al.*, 1997).
- Studies on renal disease (Roudebush *et al.*, 2010; Brown *et al.*, 2000; Brown *et al.*, 1998).
- Effects on canine semen quality (da Rocha *et al.*, 2009).

TOXICOLOGY

Essential Fatty Acids

Toxicity for essential fatty acids has not been documented in dogs and cats when administered orally in therapeutic doses. The LD_{50} values for essential fatty acids have not been determined.

Some species of fish may contain significant levels of methylmercury, polychlorinated biphenyls (PCBs), or other environmental contaminants (Mozaffarian & Rimm, 2006). In general, larger predatory fish, such as swordfish *(Xiphias gladius)*, tend to contain the highest levels of these contaminants. However, several independent laboratory analyses in the U.S. have found commercially available omega-3 fatty acid supplements to be free of contaminants (ConsumerLab, 2005; Melanson *et al.*, 2005). The absence of methylmercury in omega-3 fatty acid supplements can be explained by the fact that mercury accumulates in the muscle, rather than the fat of fish (Kris *et al.*, 2002). Fish body oils contain lower levels of PCBs and other fat-soluble contaminants than fish liver oils. Additionally, fish oils that have been more highly refined and deodorized also contain lower levels of PCBs (Hilbert *et al.*, 1998). Pyrrolizidine alkaloids, potentially hepatotoxic and carcinogenic compounds, are found in various parts of the borage plant. Supplements containing borage oil should use products that are certified free of pyrrolizidine alkaloids (Hendler & Rorvik, 2001).

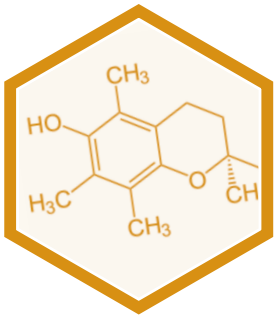
DRUG INTERACTIONS

Validated interactions studies do not exist for essential fatty acid preparations.

A literature search identified only three case reports presenting bleeding events or changes in laboratory results in human patients taking fish oil and anticoagulant medication (Jalili & Dehpour, 2007; McClaskey & Michalets, 2007; Buckley *et al.*, 2004) such as aspirin, clopidogrel, dalteparin, dipyridamole, enoxaparin, heparin, ticlopidine, and warfarin. However, one small study found that 3 g/day or 6 g/day of fish oil did not affect International Normalized Ratio (INR) values in ten patients on warfarin over a 4-week period (Bender *et al.*, 1998). Gamma-linolenic acid supplements, such as evening primrose oil or borage seed oil, may increase the risk of seizures in people on phenothiazines, such as chlorpromazine (Vaddadi, 1981).

Studies suggest that the combined use of statins and omega-3 fatty acids improves cardiovascular protection and reduces the cardiovascular disease-related mortality rate (Villalobos *et al.*, 2010). Omega-3 fatty acids do not interfere with the actions of chemotherapy and may potentiate the effect of some chemotherapeutic agents such as epothilone, 5-fluorouracil and cyclophosphamide (Wynter *et al.*, 2004).

Mixed Tocopherols



Mixed tocopherols are the collective term for a family of chemical substances that are structurally related to alpha-tocopherol. Increasing the dietary polyunsaturated fatty acid content simultaneously increases the requirement for vitamin E (Wander *et al.*, 1997). Appropriate levels of fish oil and vitamin E have been shown to increase life span, improve life quality, reduce symptoms and physical evidence of disease, and decrease mortality rates in dogs with heart disease (Dove, 2001). A wide range of clinical signs of vitamin E deficiency in dogs has been reported: degeneration of skeletal muscles associated with muscle weakness and reproductive failure in male and females, subcutaneous edema, anorexia, depression, dyspnea, and eventual coma. Vitamin E deficiency in cats has been associated with depression and anorexia, hyperesthesia on palpation of the ventral abdomen, and nodular adipose tissue (NRC, 2006).

TOXICOLOGY

Toxicity for mixed tocopherols has not been documented in dogs and cats when administered orally in therapeutic doses. However, a study in kittens suggested that toxicity of vitamin E was dose related. No mortality occurred at 5 mg/kg of body weight/day of dl-α-tocopherol intramuscular or subcutaneous, but significant mortality occurred at doses equivalent to 100 to 200 mg/kg of body weight/day and a dose of 1000 mg/kg of body weight/day caused death in all kittens in the study (NRC, 2006). The acute oral LD_{50} value of all-*rac*-α-tocopheryl acetate for rats, mice, and rabbits, has been estimated to be in excess of 2 g/kg of body weight (NRC, 1987).

DRUG INTERACTIONS

Validated interactions studies do not exist for vitamin E preparations. Clinical interactions with other drugs have not been reported. However, it has been reported that vitamin E at doses greater than 400 IU per day may increase the effect of anticoagulant drugs, although data are inconsistent (Kim & White, 1996; Corrigan & Marcus, 1974).

A number of medications may decrease the absorption of vitamin E, including cholestyramine, colestipol, isoniazid, mineral oil, orlistat, sucralfate, and the fat substitute, olestra. Anticonvulsant drugs, such as phenobarbital, phenytoin, or carbamazepine, may decrease plasma levels of vitamin E (Hendler & Rorvik, 2001).

PRECAUTIONS

- An examination from a veterinarian is recommended prior to using this product.
- Safe use in pregnant animals or animals intended for breeding has not been proven.
- If animal's condition worsens or does not improve, stop product administration and consult your veterinarian.
- Consult a veterinarian prior to use in puppies and kittens.
- Do not use in high doses with anticoagulant drugs.
- Do not use in patients with seizures or seizure disorders.
- Not to be used one week prior to surgery.
- Consult your veterinarian for potential drug interactions.
- Off-label use of this product in ruminants is not recommended.
- Oral use only.
- Administer during or after the animal has eaten to reduce incidence of gastrointestinal upset.
- Shake well before use.

WARNINGS

- To be used in dogs and cats only.
- Keep out of reach of children and animals.
- In case of accidental overdose, contact a health professional immediately.

ADVERSE REACTIONS

In humans, high doses of fish oil may cause nausea, loose stools, and "fishy" breath (Fugh & Cott, 1999).

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CONTRAINDICATIONS

- Contraindicated prior to surgery.
- Contraindicated in patients with a history of seizures or seizure disorder (Hendler & Rorvik, 2001).

AlphaVet Science™

Omega3/6/9-VM™

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