AMPHIPET

MAX Full Spectrum Nanoemulsion

Liquid

Nanoemulsion feed additive formulated for integration into dry pet food kibbles during manufacturing to enhance the nutritional value of pet food by adding a comprehensive blend of vitamins, minerals, probiotics, prebiotics, amino acids, nutraceuticals and immune boosters.

Ingredients:

Each 5 litters of AmphiPET-MAX Full Spectrum Nanoemulsion contains

*1- **Vitamins:*** Ascorbic Acid (Vitamin C), Vitamin A (Retinyl acetate), Vitamin E (dl-α-Tocopheryl acetate), Mixed Tocopherols, Folic Acid, Vitamin B1 (Thiamine), Vitamin B12 (Cobalamin), Vitamin B2 (Riboflavin), Vitamin B3 (Niacin), Vitamin B5 (Calcium Pantothenate), Vitamin B6 (Pyridoxine HCl), Vitamin K_3 (Menadione), Vitamin D_3 (Cholecalciferol) and Choline Chloride (vitamin-like quaternary ammonium essential nutrient).

*2- **Minerals (Chelated):*** Chelated Zinc, Chelated Copper, Chelated Manganese, Chelated Iron, Selenium Glycinate, Magnesium Glycinate, Potassium Iodide and Potassium Citrate.

*3- **Probiotics:*** Enterococcus faecium, Lactobacillus acidophilus, Bacillus licheniformis, Bacillus coagulans, Lactobacillus plantarum and Bacillus subtilis

*4- **Prebiotics:*** FOS (Fructo-oligosaccharide), MOS (Mannan Oligosaccharide) and Beta Glucan

*5- **Enzymes:*** Protease (Papain), Lipase, Amylase, Mannanase, α-Galactosidase, β-Glucanase, Pectinase, Phytase, Xylanase and Cellulase

*6- **Amino Acids and Proteins:*** Methionine, Lysine, Taurine Amino Acid Powder, Amino Acid Mix (80%), Protein Peptides and Collagen Peptides Powder

*7- **Nutraceuticals:*** MSM Powder, Glucosamine Sulfate Powder, Chondroitin Sulfate Powder, HMB Powder, Turmeric Extract (Curcumin), CLA Powder, Omega 3, 6 and 9 and Betaine HCl

*8- **Preservatives, Stabilizers and Antioxidants:*** Sorbic Acid, Formic Acid, Phosphoric Acid (75%), Citric Acid (anhydrous), Ascorbic Acid (Vitamin C), Ascorbyl Palmitate, Tartaric Acid, Lactic Acid and Disodium EDTA

*9- **Carrier and Delivery System:*** Water-Oil Emulsion Carrier, Polyethylene Glycol, Food-grade Dextrin and MCT Oil

*10- **Flavoring Agents:*** Natural Salmon Flavor

Product Description:

AmphiPET-MAX Full Spectrum Nanoemulsion is designed to be mixed with dry food kibbles during manufacturing process, providing essential probiotics, enzymes, prebiotics, vitamins, minerals, and amino acids that support your pet's digestive health, immune system, and overall vitality.

AmphiPET-MAX Full Spectrum Nanoemulsion is a premium liquid feed additive, manufactured using cutting-edge nano-emulsion technology to ensure superior bioavailability, rapid absorption and enhanced palatability.

AmphiPET-MAX Full Spectrum Nanoemulsion allows incorporating nanomaterials into animal feed leading to improved animal growth, better-feed utilization and more efficient nutrient conversion. In addition, nanomaterials can help improve digestion and absorption of nutrients in animals, resulting in better overall metabolism and physiology. This advanced formulation ensures that your pet receives the full benefit of each carefully selected component, even in small doses.

AmphiPET-MAX Full Spectrum Nanoemulsion, by applying nano-emulsified particles have a significantly larger surface area, facilitating faster digestion and uptake through the intestinal lining. This is particularly beneficial for animals with compromised gut health, weak digestion, or during recovery. The result is faster action, improved nutrient delivery, and greater physiological impact compared to conventional feed additives.

AmphiPET-MAX Full Spectrum Nanoemulsion, by applying nano-encapsulation technique, probiotics are dispersed into outer coats to shield them from environmental conditions.

Product Benefits:

1- AmphiPET-MAX Full Spectrum Nanoemulsion helps support digestive health.

2- AmphiPET-MAX Full Spectrum Nanoemulsion helps improve symptoms of IBS in dogs.

3- AmphiPET-MAX Full Spectrum Nanoemulsion helps accelerate clinical recovery of acute hemorrhagic diarrhea in dogs.

4- AmphiPET-MAX Full Spectrum Nanoemulsion can boost immune function & inflammation control.

5- AmphiPET-MAX Full Spectrum Nanoemulsion helps as neurological & metabolic support.

6- AmphiPET-MAX Full Spectrum Nanoemulsion may be essential for skeletal & muscular development.

7- AmphiPET-MAX Full Spectrum Nanoemulsion helps skin, coat & cellular health.

8- AmphiPET-MAX Full Spectrum Nanoemulsion helps growth & recovery.

9- AmphiPET-MAX Full Spectrum Nanoemulsionis used for dogs of all ages.

10- AmphiPET-MAX Full Spectrum Nanoemulsion is used for improving and prevention of atopic dermatitis, inflammatory bowel disease, and osteoarthritis in dogs.

11- AmphiPET-MAX Full Spectrum Nanoemulsion may be used to improve diabetic control in pets.

12- AmphiPET-MAX Full Spectrum Nanoemulsion may be used to guard against cardiomyopathy in dogs.

13- AmphiPET-MAX Full Spectrum Nanoemulsion may be of value for aging dogs.

14- AmphiPET-MAX Full Spectrum Nanoemulsion includes several omegas.

15- AmphiPET-MAX Full Spectrum Nanoemulsion contains betaine helpful in renal diseases.

Incorporation of AmphiPET-MAX Full Spectrum Nanoemulsion into Tallow Oil:

Objective

- To provide detailed instructions for the homogeneous mixing of AmphiPET-MAX Full Spectrum Nanoemulsion into tallow oil, ensuring product stability, efficacy, and compliance with quality standards.

Scope

- Applicable to production batches involving a 1000-liter tallow oil tank, with an inclusion rate of 4 liters of AmphiPET-GUARD per 40 liters of tallow oil.

Equipment:

- 1000-liter stainless steel tallow oil tank with heating jacket and temperature control.
- High-shear mixer (e.g., inline rotor-stator mixer) capable of 3000–6000 RPM.
- Recirculation pump compatible with high-viscosity fluids.
- Nanoemulsion application system with adjustable nozzles and pressure control.
- Temperature monitoring devices (digital thermometers or probes).

Materials:

- ***AmphiPET-MAX Full Spectrum Nanoemulsion.***
- Tallow oil, pre-filtered and free from impurities.
- Personal Protective Equipment (PPE): gloves, safety goggles, lab coat.

Safety Precautions

- Ensure all personnel wear appropriate PPE.
- Verify that all equipment is clean and free from contaminants.
- Maintain the working area free from obstructions and spills.
- Ensure proper ventilation in the mixing area.

Procedure

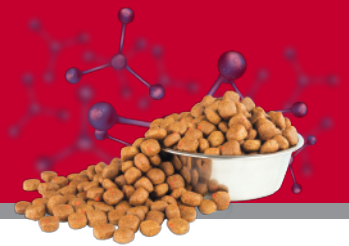
1- Preparation

1- Tallow Oil Heating:

- Activate the heating system of the tallow oil tank.
- Gradually heat the tallow oil to a temperature of 40–45°C.
- Maintain this temperature range throughout the mixing process to ensure optimal fluidity.

2- AmphiPET-MAX Full Spectrum Nanoemulsion Preparation:

- Gently invert the AmphiPET-MAX Full Spectrum Nanoemulsion • containers to ensure uniformity.



2- Mixing

1- Initial Mixing:

- Start the high-shear mixer at a low speed (~1000 RPM) to create a gentle vortex in the tallow oil.
- Slowly add the calculated volume of AmphiPET-MAX Full Spectrum Nanoemulsion into the vortex.
- For a 1000-liter tank, the inclusion rate is 100 liters of **AmphiPET-MAX Full Spectrum Nanoemulsion** (based on 4 liters per 40 liters of tallow oil).

2- Shear Mixing:

- Gradually increase the mixer speed to 3000–6000 RPM.
- Continue mixing for 15–20 minutes to ensure thorough dispersion of the nanoemulsion.
- Monitor the mixture for homogeneity; the solution should appear uniform without visible separation.

3- Recirculation (if applicable):

- If using a recirculation pump, circulate the mixture through the high-shear mixer for an additional 10 minutes to enhance uniformity.

3- Post-Mixing

Cooling:

- After mixing, allow the mixture to cool to ambient temperature (20–25°C).
- Continue gentle stirring during cooling to maintain homogeneity.

Quality Check:

- Collect samples from different points in the tank.
- Assess for uniformity, absence of phase separation, and consistency in appearance.