

HEPA-QAS

NUTRITIONAL SUPPLEMENT IN ORAL SOLUTION

1. COMPOSITION

Each ml contains: sorbitol 350 mg; carnitine hydrochloride 90 mg; choline chloride 60 mg; betaine 30 mg; DL-methionine 25 mg; *Silybum marianum* extract 20 mg; *Cynara scolimus* extract 0.8 mg; *Peumus boldus* extract 0.8 mg.

2. DESCRIPTION

HEPA-QAS is a nutritional supplement consisting in a well-balanced combination of sorbitol, amino-acids (carnitine and methionine), vitamin-like essential nutrient choline and extracts of herbs traditionally used for their beneficial properties on the liver. **HEPA-QAS** contributes to the well-being of the animal and the maintenance of the levels of micronutrients necessary for the good development of the animal, including young, convalescence, weak or orphan animals.

Sorbitol: sorbitol stimulates the secretion of pancreatic enzymes and has a detoxifying effect on the liver by increasing the production and secretion of bile. Sorbitol is particularly useful for animals raised in an intensive way, especially during weaning and critical growth phases.

Carnitine hydrochloride: carnitine is a conditionally essential micronutrient. L-carnitine is required for mitochondrial β -oxidation of long-chain fatty acids for energy production.

Choline chloride: Choline is a vitamin-like essential nutrient and a methyl donor involved

in many physiological processes, including normal metabolism and transport of lipids, methylation reactions, and neurotransmitter synthesis.

Betaine: is involved in the regulation of homocysteine concentration in the blood. Betaine is an osmolyte that regulates cell volume and protect cell integrity against osmotic stress (especially in the kidney).

DL-methionine: is the substrate for other amino acids such as cysteine and taurine, versatile compounds such as SAM-e, and the important antioxidant glutathione, methionine plays a critical role in the metabolism and health of many species. Methionine is also an important part of angiogenesis, the growth of new blood vessels. Supplementation may benefit those suffering from copper poisoning.

***Silybum marianum* extract:** *Silybum marianum* (*Carduus marianum* or milk thistle) is a plant of the *Asteraceae* family. It has been shown to possess antioxidant properties and thus preventing lipid peroxidation and membrane destruction in cells of the liver. Biosynthesis and cell regeneration are also accelerated.

***Cynara scolimus* extract:** *Cynara scolimus* or artichoke is used to stimulate the flow of bile from the liver. Traditional medicinal uses of artichoke pertain to liver function as choleric (bile increasing), hepatoprotective, cholesterol-reducing, and diuretic..



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Peumus boldus extract: *Peumus boldus* or boldo is used for mild gastrointestinal spasms, gallstones, and liver disease. It also increases urine flow to rid the body of excess fluids and increases bile flow.

3. RECOMMENDED USE

- Prevention or treatment of vitamin C deficiencies in farm animals, including increased disease incidence.
- Convalescence
- Improve the immune response.
- Prevention against copper-induced damage in erythrocyte and liver of broiler chickens.
- Prevention against infectious bursal disease, malabsorption syndrome, adenovirus infections, chicken anaemia agent, mycotoxins or coccidiosis.
- Prevention and treatment of stress caused by vaccination, diseases, transport, high humidity, high temperatures or extreme temperature changes.

4. CONTRAINDICATIONS

None described.

5. ADVERSE EFFECTS

None described.

6. SPECIAL PRECAUTIONS

None described.

7. ADMINISTRATION

Oral use in drinking water.

- Poultry: Add 1 ml per 10 litres drinking water for 3 to 5 days.
- Calves and cows, goats and sheep: 1 ml/50 kg bw for 3 to 5 days.

8. TARGET SPECIES

Cattle, sheep, goats and poultry.

9. WITHDRAWAL PERIOD

Zero days.

10. STORAGE CONDITIONS

Store below 30 °C.

Protect from light.

11. SIZES

1 L or 5 L



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