

# Liposomal B12

1000mcg of micellar liposomal vitamin B12 per mL to provide enhanced bioavailability, stability and sustained release. Mixed berry flavour for improved compliance.

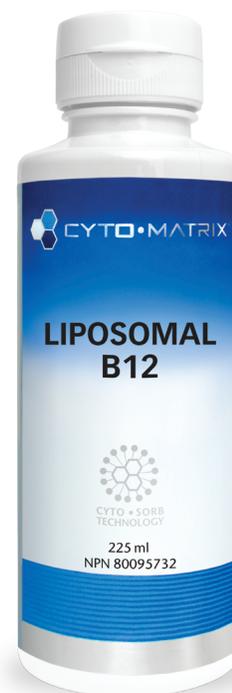
Each 1ml teaspoon contains:

Vitamin B12 (methylcobalamin)

1000mcg

225 ml

Vegan. GMO, gluten, soy and dairy free.



Vitamin B12 has long been identified as a crucial nutrient in human health. In particular, its critical role in the health of the nervous system is well-established. Signs and symptoms of B12 deficiency can include fatigue, cognitive decline, mood changes, peripheral neuropathy, restless leg syndrome, macrocytic anemia and hyperhomocysteinemia.

In the diet, vitamin B12 is primarily found in animal meats, meaning that vegans and vegetarians are at particular risk of developing suboptimal levels. However, various stressors such as gastrointestinal conditions and pharmaceutical medications can also lead to a vitamin B12 deficit in the body. In fact, one large-scale research trial found that almost 40% of the general population may have suboptimal B12 serum levels.

Vitamin B12 can be found in a number of forms including cyanocobalamin, hydroxycobalamin, adenosylcobalamin and methylcobalamin. The latter two forms are generally preferred for supplementation as these are the cofactor forms used in enzymatic reactions within the body. Adenosylcobalamin is the major form in cellular tissue while methylcobalamin is predominant in plasma and cerebrospinal fluid. Specifically, methylcobalamin has been studied to protect the brain and neurological tissue in cases of multiple sclerosis, cognitive disease, poor mood and peripheral neuropathy. It has also been shown to normalize circadian rhythms and improve sleep parameters. Liposomal B12 by Cyto-Matrix delivers methylcobalamin in a micellar liposome formulation, offering a variety of advantages over a standard B12 supplement.

## Key points

- Patented Cyto-Sorb technology utilizes a two-phase emulsion process with phosphatidylcholine sourced from GMO-free sunflower, vitamin E and organic coconut vegetable glycerin in order to create micellar liposomes and drastically improve the bioavailability, stability and sustained release of vitamin B12
- Methylcobalamin has been studied for its ability to improve peripheral neuropathy, multiple sclerosis, low mood and cognitive decline
- Each 1mL provides 1000mcg of micellar liposomal methylcobalamin in a mixed berry flavour
- Each bottle provides 225 servings

Liposomal delivery systems were originally developed to optimize the pharmacokinetics and efficacy of pharmaceutical drugs. These same principles have now been applied to natural health ingredients. A liposome consists of either a single-layered or multi-layered phospholipid structure with an aqueous core. Active ingredients can be placed inside the aqueous core or within the phospholipid bilayer, where they are protected from various enzymatic and digestive processes. Ultimately, liposomes provide improved bioavailability for active ingredients.

However, not all liposomal deliveries are created equal. Liposomes are several hundred nanometers in size, which means that there is still a significant amount of digestion that must occur to decrease surface area and allow for proper absorption. Micelles, on the other hand, are significantly smaller and can be absorbed directly at ~20 nanometers in size.

**Liposomal Vitamin B12** by Cyto-Matrix utilizes a unique and patented technology, Cyto-Sorb, in order to create a stable multi-layered liposome with additional micellar delivery of vitamin B12. These methods allow for micronutrient stability and improved bioavailability, while also promoting the delivery of active ingredients to the intestinal sites of absorption in a sustained release fashion.

Cyto-Sorb liposomal formulas are produced through a two-phase emulsion process utilizing phosphatidylcholine sourced from GMO-free sunflower, vitamin E and organic coconut vegetable glycerin. Potassium bicarbonate is strategically added to stabilize the active ingredient, prevent oxidation and improve flavour. **Liposomal Vitamin B12** by Cyto-Matrix provides 1000mcg of methylcobalamin per mL, in a delicious mixed berry flavour for improved compliance. Each bottle provides 225 servings.

## Related products

Bio-B6

Cyto B-Complex

Liposomal C

Liposomal CoQ10

Liposomal Glutathione

**Non-Medicinal Ingredients:** Purified water, glycerin, phosphatidylcholine, sunflower oil, d-alpha tocopherol, acacia gum, citric acid, natural vanilla flavour, natural strawberry flavour, natural grape flavour, natural blueberry flavour.

**Indications:** Helps to prevent vitamin B12 deficiency and to form red blood cells.

**Directions:** Adults - Take 1 ml per day or as directed by a healthcare professional. Can be taken directly or mixed with a glass of water. Shake before use.

**Warnings:** Do not use if safety seal is broken. Consult a healthcare professional prior to use, especially if you are pregnant or breastfeeding.



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