LUBRIZOL LIFE SCIENCE

Microencapsulated Minerals

LIPOFER™ microcapsules Bioavailable and stable source of iron

Description

LIPOFER™ microcapsules is a water dispersible micronized source of iron that has been microencapsulated to enhance iron absorption and reduce undesirable organoleptic attributes, thus enabling the enrichment of various types of foods and dietary supplements.

Composition

Identity Preserved Corn Starch, Iron Pyrophosphate and Sunflower Lecithin.

*Product contains 8% iron concentration

A nutritional view

Iron is an essential constituent of the body, necessary for haemoglobin formation and the oxidative processes of living tissues. Iron found in the body is either actively in use or in storage. The amount of iron in storage varies with individual conditions and dietary intake.

According to the World Health Organization (WHO), iron deficiency is recognized as the most common and widespread nutritional disorder in the world. It affects a large number of children and women in developing countries and is the only nutrient deficiency still prevalent in industrialized nations. Iron fortification is generally considered the best approach for preventing or eradicating iron deficiency; however the chemical reactivity of iron species and their affinity to various components of food systems often result in the generation of discoloration or objectionable flavors as well as reduced bioavailability of the mineral.

Microencapsulation is currently considered the leading solution for overcoming these limitations as it provides a uniform and stable protective layer to the active ingredient. LIPOFER™ microcapsules is a microencapsulated source of iron, which is designed to reduce iron's reactivity while improving its bioavailability.

Applications

Milk powder, dairy products and dietary supplements including capsules, pills, chewable and effervescent tablets, orosoluble powders, drops, syrups, etc.

Competitive advantages

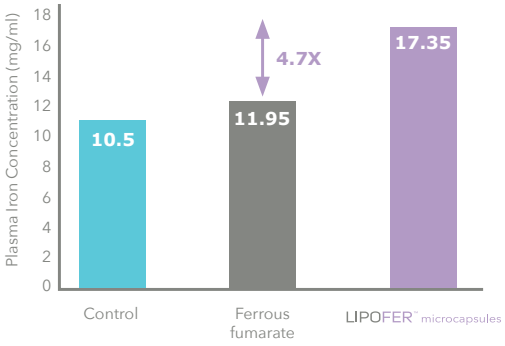
- Reduces metallic taste
- Controls interactions with other components
- Water dispersible
- No digestive tract irritation

Lipofoods™
Nutraceutical Ingredients

Absorption vs ferric pyrophosphate and ferrous sulfate in rats

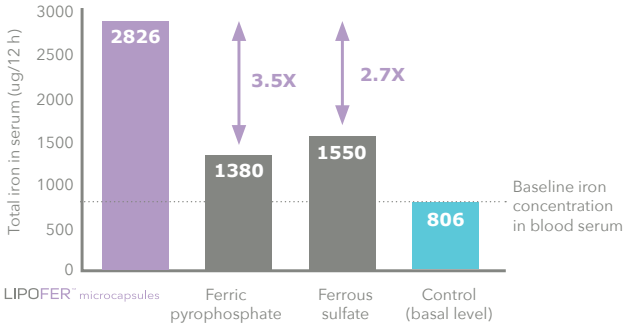
In order to study the efficiency of LIPOFER™ microcapsules on iron absorption vs non-encapsulated ferric pyrophosphate and ferrous sulfate, laboratory trials were carried out on four groups of rats.

Three sources of iron (Ferric pyrophosphate, LIPOFER™ microcapsules and Ferrous sulfate) at a dose of 10 mg iron/kg were administered orally and concentration of iron was quantied through Atomic Absorption after 12h.



LIPOFER™ microcapsules is a highly bioavailable source of iron

Results showed that LIPOFER™ microcapsules is 3.5X more bioavailable than Ferric pyrophosphate and 2.7X than Ferrous sulfate.



Iron status improvement in fortified juice vs placebo in women

The influence of LIPOFER™ microcapsules on iron status was determined in a 16 week double blind study in 130 menstruating women with low iron stores, aged 18 to 35 years. One group consumed, as a supplement to their usual diet, 500 ml/d of the LIPOFER™ microcapsules fortified fruit juice (F group, n 64), whereas the other consumed 500 ml/d of the placebo fruit juice (P group, n 66). Serum ferritin was determined at baseline and monthly.

LIPOFER™ microcapsules fortified fruit juice consumption significantly improved the iron status

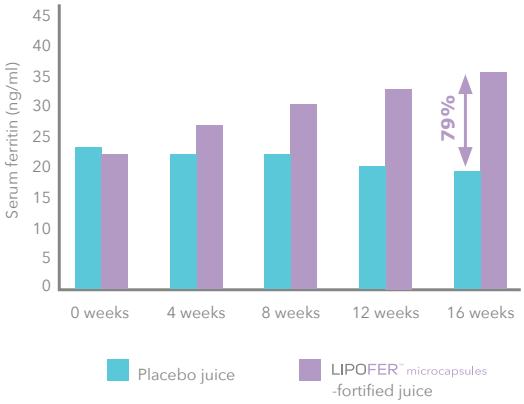
Ferritin was higher in the fortified group after 4 weeks and became about 80% higher after 16 weeks.

Absorption vs iron fumarate in rats

A study on three groups of mice was performed to monitor the comparative absorption of iron from iron fumarate and LIPOFER™ microcapsules. Two hours after administration, the blood was collected and its iron content was further analyzed. The iron content of the salts administered was equivalent in all cases (10 mg/kg of animal weight).

With LIPOFER™ microcapsules a higher increase in the iron absorption is observed

Iron absorption via LIPOFER™ microcapsules is 5X higher than with traditional iron salts.



For more information, visit www.lipofoods.com

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