Ferrazone® chelated iron

The most bio-available iron against anemia

Ferrazone®
This Iron Works

Nouryon

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How to combat anemia?

Iron deficiency anemia is one of the major health issues globally, affecting as many as 1.5 billion people. In general, iron deficiency anemia causes a loss of physical endurance due to reduced levels of hemoglobin and tissue iron. During pregnancy, iron deficiency anemia is associated with increased risk of maternal mortality. Iron deficiency in infancy and child-hood is associated with significant loss of cognitive abilities and decreased resistanceto infections.

Iron deficiency anemia

Iron is present in every cell in the human body and plays a vital role in red blood cells by helping to carry oxygen through the body. Iron deficiency affects the function of the human body. In severe form, iron deficiency results in anemia. Iron deficiency is the most prevalent nutrient deficiency in the world. As estimated by the World Health Organization (WHO) 40% of the world's population is anemic. It is responsible for approximately 20.000 deaths among children under 5 years of age. In addition iron-deficiency anemia in pregnancy is a risk factor for maternal mortality. 115,000 deaths per year from maternal causes among women of childbearing age have been attributed to iron deficiency.

According to a World Health Organization (WHO) review of nationally representative surveys from 1993 to 2005, 42% of pregnant women and 47% of preschool children worldwide have anemia. Iron deficiency has its greatest impact on the healthand well-being of preschool children and women of childbearing age, though it may also affect other population groups. Anemia manifests itself in lower work productivity in men and women, decreased intelligence in children, and greater risk of lower birth weight babies in pregnant women.

Ferric Sodium EDTA for flour and food fortification

The most efficient way of preventing and treating iron deficiency anemia is through the fortification of food products with a form of iron that is readily absorbed by the body. Our Ferric Sodium EDTA, Ferrazone® chelated iron, has been demonstrated to be both safe and effective in reducing iron deficiency through its superior bioavailability, especially in diets where the inherent compounds inhibit iron absorption.

The main challenge in any iron supplementation is avoiding undesirable color and flavor changes of the fortified food. Also important is the effectiveness of iron as absorbed on the cellular level in the body. Unlike other iron compounds, Ferrazone® chelated iron is beneficial in all of the below:

- Well-soluble in water
- No metallic taste
- No teeth staining
- No rancidity
- Highly effective, even in presence of phytate

Fortifying staple foods (i.e. various types of flour) with Ferrazone® chelated iron is the most efficient way of combating anemia in developing countries. Therefore, we are working closely with NGO's, governments and leading producers of pre-mixes (a mix of vitamins and minerals used to fortify food) to provide the highest quality product and the know-how needed for successful application.

Safety track record

We have been studying, supporting and reviewing the research into Ferrazone® chelated irons safety, environmental impact and efficacy for over 50 years. All evidence points to Ferrazone® chelated irons absolute safe use for human consumption.

Research has shown that Ferric Sodium EDTA shows total absence of toxicity in the human body when taken orally. The iron-EDTA complex is tightly bonded and the iron is only released across the intestinal barriers when it is needed, not actively 'pushed' into bloodstream, which eliminates the risk of iron overload.

Once the iron molecules are transferred across intestinal walls, the EDTA molecules are usually excreted from the body in a matter of hours through the kidneys. Research has shown that there is no carcinogenic effect whatsoever and there is no endocrine disruption. Concerns about the EDTA's risk of 'depleting' other ingested minerals such as calcium are also unfounded.

On the contrary, some studies have shown that diets containing Ferric Sodium EDTA, as compared to ferrous sulfate, actually improve the bioavailability and uptake of zinc. This suggests that the empty EDTA molecules might be 'shuttling' the zinc molecules more effectively across intestinal walls by binding to them, which is essential when there are other inhibitory compounds present that can limit the uptake of this important mineral. Ferric Sodium EDTA has no impact on the uptake of calcium and manganese, or even lead.

Usage guidelines

JECFA has stated that the maximum ADI (Acceptable Daily Intake) for EDTA is 1.9 mg/day/kg of bodyweight (bw), which equates for Ferrazone® chelated iron to be 2.8 mg/day/kg bw.

Ferric Sodium EDTA is at least 2 to 3 times more bioavailable than comparable sources of iron such as ferrous sulfate or fumarate, which formulators should take into consideration. Research literature available upon request.

Featured applications

Ferrazone® chelated iron can be used in many food and beverage products, due to its inherent stability and ease of handling. It is especially ideal for dry mixing with other powders such as premixes, beverage mixes and other dry goods.

Wheat and maize flour-based products

Ferrazone® chelated iron can be added to wheat andmaize flour, which are two out of three main consumed staple foods in the world. Examples of flour-derived products are bread, biscuits, pasta, instant noodles and cereals.

Beverages

Powered drinks and ready-to-serve beverages such as fruit flavored drinks and functional drinks like sport drinks and protein shakes are also good targets for iron fortification.

Supplements

Ferrazone® chelated iron can be used in food supplements under various forms such as syrups, sprays, tablets and powder sachets.

Condiments

Ferrazone® chelated iron may advantageously be used to fortify common everyday condiments such as soy sauce, fish sauce, bouillon cubes and salt.

Product overview

Ferrazone® chelated iron is suitable for use in food and has been recommended by the World Health Organization as the only suitable iron supplement for the mass fortification of high-phytate cereal flours and is also recommended for condiments such as soy sauce and fish sauce.

Ferrazone® chelated iron is used in large scale food fortification initiatives in Africa, Latin America, Asia and the Middle East.

Ferrazone® chelated iron is manufactured at our plant in Herkenbosch, the Netherlands. This production facility is certified according to the quality assurance system FSSC22000. Ferrazone is also certified for use in Kosherand Halal food.

Ferrazone® chelated iron has officially been approved for usein food by the JECFA, the FDA and EFSA.

Ferrazone® chelated iron is manufactured according to the specifications as outlined in the monographsfor food-grade ferric sodium EDTA by FCC 8th version and the JECFA.

There are three grades available:

Grade	Application
Ferrazone® chelated iron	Food, beverages and supplements
Ferrazone® XF chelated iron	Wheat and maize flour
Ferrazone® BP chelated iron	Pharmaceuticals

Contact us directly for detailed product information and sample request
website | ferrazone.com
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Nouryon

Nouryon is a global, specialty chemicals leader. Markets and consumers worldwide rely on our essential solutions to manufacture everyday products, such as personal care, cleaning goods, paints and coatings, agriculture and food, pharmaceuticals, and building products. Furthermore, the dedication of more than 7,900 employees with a shared commitment to our customers, business growth, safety, sustainability and innovation has resulted in a consistently strong financial performance. We operate in over 80 countries around the world with a portfolio of industry-leading brands. Visit our website and follow us @Nouryon and on LinkedIn.

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