**Summary Product Characteristics (SPC)**

**1.1NameoftheMedicinalProduct**

**VITAFERON**
Iron, Folic Acid, Zinc, Vitamin B12 and Minerals Syrup

**1.2Strength**
Iron- 50mg, Folic Acid-500mcg, Zinc-11mg, Vitamin B12-7.5mcg

**1.3PharmaceuticalForm**
Suspension Oral dosage form

**2. QUALITATIVE AND QUANTITATIVE COMPOSITION**
Each 5 ml Contain:-

| | |
|---|---|
| Iron-III Hydroxide Polymaltose Complex | |
| Equivalent to Elemental Iron | 50 Mg |
| Folic Acid BP | 500mcg |
| Vitamin B12 | 7.5mcg |
| Zinc Sulphate | |
| Mono Hydrate USP | 30.19mg |
| Eq. To Elemental Zinc | 11mg |
| Approved colour used | q.s |
| Flavoured syrup base | q.s |

**3. PHARMACEUTICALFORM**
Oral syrup

**4. Clinical Particulars**
**4.1. Therapeutic indications**
Iron deficiency Anemia, Pregnancy anemia, lactation, loss of appetite, general weakness and convalescence.

**4.2. Posology and method of administration**
**Children 1-3 years**

Half teaspoonful two times daily

**Children 4-12 years**

One teaspoonful two times daily

**Adults (Men &Women)**

One teaspoonful 3 times daily

**4.3. Contra-indications**
Peptic ulcer, regional enteritis, ulcerative colitis. Hemachromatosis, hemosiderosis and hemolytic anemia and all anaemias other than iron deficiency.

**4.4. Special warnings and special precautions for use**

**Iron-III Hydroxide Polymaltose**

Some post-gastrectomy patients show poor absorption of iron. Care is required when treating patients with iron deficiency anaemia who have treated or controlled peptic ulceration.

Duration of treatment of uncomplicated iron deficiency anaemia should not usually exceed 6 months (3 months after reversal of the anaemia has been achieved).

Because anaemia due to combined iron and Vitamin B12 or folate deficiencies may be microcytic in type, patients with microcytic anaemia resistant to treatment with iron alone should be screened for Vitamin B12 or folate deficiency.

Fersamal syrup should be kept out of the reach of children.

Long-term treatment with Fersamal syrup may increase the risk of dental caries. Adequate dental hygiene must be maintained. Since Fersamal syrup contains sugar, care must be exercised when using in patients with diabetes mellitus.

**Folic acid**

Folic acid should not be administered for treatment of pernicious anaemia or undiagnosed megaloblastic anaemia without sufficient amounts of cyanocobalamin (vitamin $B_{12}$) as folic acid alone will not prevent and may precipitate development of subacute combined degeneration of the spinal cord. Therefore a full clinical diagnosis should be made before initiating treatment.

Folate should not be routinely used in patients receiving coronary stents.

Caution should be exercised when administering folic acid to patients who may have folate dependent tumours.

Folic acid is removed by haemodialysis.

Contains methyl- ethyl- and propyl- p-hydroxybenzoates; may cause allergic reactions (possibly delayed).

Contains 0.75 mmol (or 17.4mg) sodium per 20 ml dose, and is therefore essentially 'sodium-free'.

Contains phenylalanine. May be harmful for people with phenylketonuria.

**Vitamin B12**

For pernicious anaemia, an adequate dose must be used and the blood picture must be examined regularly at least every 3 months for 18 months until stabilised, and then annually.

Indiscriminate administration of this medicine may mask the precise diagnosis.

Long term treatment with this medicine may increase the risk of dental carnes. It is important that adequate dental hygiene is maintained.

Medicines containing sugar should be administered with care to patients with Diabetes Mellitus.

**Zinc Sulphate Monohydrate**

Accumulation of zinc may occur in cases of renal failure.

This product contains sorbitol (E420), therefore patients with rare hereditary problems of fructose intolerance should not take this medicine.

This product contains sodium. This should be taken into consideration by patients on a controlled sodium diet.

**4.5. Interactions with other Drug products and other forms of interaction**

**Iron-III Hydroxide Polymaltose**

Iron reduces the absorption of penicillamine, bisphosphonates, ciprofloxacin, entacapone, levodopa, levofloxacin, levothyroxine (thyroxine) (give at least 2 hours apart), moxifloxacin, mycophenolate, norfloxacin, ofloxacin, zinc. Absorption of both iron and antibiotic may be reduced if Fersamal 140mg/5ml is given with tetracycline. Absorption of oral iron is reduced by calcium salts, Magnesium salts (as magnesium trisilicate), Trientine.

Chloramphenicol delays plasma iron clearance, incorporation of iron into red blood cells and interferes with erythropoiesis. Some inhibition of iron absorption may occur if it is taken with cholestyramine, tea, eggs or milk.

Avoid concomitant use of iron with dimercaprol.

Oral iron antagonises hypotensive effect of methyldopa.

**Folic acid**

Absorption of folic acid may be reduced by sulfasalazine.

Concurrent administration with cholestyramine may interfere with folic acid absorption. Patients on prolonged cholestyramine therapy should take folic acid 1 hour before or 4 to 6 hours after receiving cholestyramine.

Antibiotics may interfere with the microbiological assay for serum and erythrocyte folic acid concentrations and may cause falsely low results.

Trimethoprim or sulphonamides, alone or in combination as co-trimoxazole, may reduce the effect of folic acid and this may be serious in patients with megaloblastic anaemia.

Folic acid has been observed to reduce plasma levels of anticonvulsants, particularly phenytoin, phenobarbital and primidone and therefore patients should be carefully monitored by the physician and the anticonvulsant drug dose adjusted as necessary.

Fluorouracil toxicity may occur in patients taking folic acid and this combination should be avoided.

Edible clay or antacids containing aluminium or magnesium may reduce folic acid absorption. Patients should be advised to take antacids at least two hours after administration of folic acid.

Folic acid may reduce intestinal absorption of zinc (of particular importance in pregnancy).

**Vitamin B12**

Absorption may be reduced by Para-aminosalicylic acid, colchinine, biguanides, neomycin, cholestyramine, potassium chloride, methyldopa, and cimetidine.

Patients treated with chloramphenicol may respond poorly to this medicine.

Serum levels of cyancobalamin may be lowered by oral contraceptives.

These interactions are unlikely to have clinical significance.

Anti-metabolites and most antibiotics invalidate vitamins $B_{12}$ assays by microbiological techniques.

**Zinc Sulphate Monohydrate**

Copper:

Zinc may inhibit the absorption of copper

Tetracycline Antibacterials:

Zinc may reduce the absorption of concurrently administered tetracyclines, also the absorption of zinc may be reduced by tetracyclines; when both are being given an interval of at least three hours should be allowed.

Quinolone Antibacterials:

Zinc may reduce the absorption of quinolones; ciprofloxacin, levofloxacin, moxifloxacin, norfloxacin and ofloxacin.

Calcium Salts:

The absorption of zinc may be reduced by calcium salts.
Iron:
The absorption of zinc may be reduced by oral iron, also the absorption of oral iron may be reduced by zinc.
Penicillamine:
The absorption of zinc may be reduced by penicillamine, also the absorption of penicillamine may be reduced by zinc.
Trientine:
The absorption of zinc may be reduced by trientine, also the absorption of trientine may be reduced by zinc.

**4.6. Pregnancy and lactation**
**Iron-III Hydroxide Polymaltose**
Pregnancy
Ferrous fumarate can be used during pregnancy if clinically indicated.
Lactation
No adverse effects of ferrous fumarate have been shown in breastfed infants of treated mothers. Ferrous fumarate can be used during breast-feeding if clinically indicated.
**Folic acid**
Pregnancy
Folic acid deficiency during pregnancy may lead to the appearance of foetal malformations. Imbalance in folate requiring trophoblast cells may also lead to detachment of the placenta.
Harmful effects in the human foetus, mother or the pregnancy have not been reported following ingestion of folic acid. Very high doses of folic acid have been shown to cause foetal abnormalities in rats.
Lactation
Folic acid is excreted in breast milk. No adverse effects have been observed in breast-fed infants whose mothers were receiving folic acid.
**Vitamin B12**
This medicine should not be used to treat of megaloblastic anaemia of pregnancy because this is due to folate deficiency.
**Zinc Sulphate Monohydrate**
The safety of this product in human pregnancy has not been established. Zinc crosses the placenta and is present in breast milk.

**4.7. Effects On Ability To Drive And Use Machines**
Non Known

**4.8. Adverse Reactions**
**Iron-III Hydroxide Polymaltose**
The commonest side effects relate to gastrointestinal irritation (nausea, epigastric pain, constipation or diarrhoea). In the event of these ADRs, it may be helpful to reduce the dose or switch to an alternative iron salt.
Darkening of stools, black discoloration of the teeth and allergic reactions (due to metabisulphite in the syrup vehicle) may also occur

**Folic acid**
Folic acid is generally well tolerated, although the following side effects have been reported:

Blood and lymphatic system disorders:
Folic acid may worsen the symptoms of co-existing vitamin $B_{12}$ deficiency and should never be used to treat anaemia without a full investigation of the cause.
Immune system disorders:
Allergic reactions to folic acid have been reported.
Gastrointestinal disorder:
Abdominal distension, flatulence, anorexia and nausea.

**Reporting of suspected adverse reactions**
Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via the Yellow Card Scheme at www.mhra.gov.uk/yellowcard.

**Vitamin B12**
Sensitisation to cyancobalamin is rare, but may present as an itching exanthema, and exceptionally as anaphylactic shock.
Acneform and bullous emptions have been reported rarely.
Patients who have become sensitised to cyanocobalamin by injection are often able to tolerate cyancobalamin by the oral route without trouble.
**Zinc Sulphate Monohydrate**
Zinc salts may cause abdominal pain, dyspepsia, nausea, vomiting, diarrhoea, gastric irritation and gastritis. There have also been cases of irritability, headache and lethargy observed.
Zinc may interfere with the absorption of copper, leading to reduced copper levels, and potentially copper deficiency. The risk of copper deficiency may be greater with long-term treatment (e.g. if zinc deficiency is no longer present) and/or with higher doses of zinc.

**4.9 OVER DOSE**
**Iron-III Hydroxide Polymaltose**
Symptoms:
Ingestion of 20 mg/kg elemental iron is potentially toxic and 200-250 mg/kg is potentially fatal. No single method of assessment is entirely satisfactory - clinical features as well as laboratory analysis must be taken into account. The serum iron taken at about 4 hours after ingestion is the best laboratory measure of severity.

| Serum Iron | Severity |
|---|---|
| < 3 mg/L (55 micromol/L) | Mild toxicity |
| 3-5 mg/L (55-90 micromol/L) | Moderate toxicity |
| > 5 mg/L (90 micromol/L) | Severe toxicity |

Early signs and symptoms include nausea, vomiting, abdominal pain and diarrhoea. The vomit and stools may be grey or black.In mild cases early features improve but in more serious cases there may be evidence of hypoperfusion (cool peripheries and hypotension), metabolic acidosis and systemic toxicity. In serious cases there can be recurrence of vomiting and gastrointestinal bleeding, 12 hours after ingestion. Shock can result from hypovolaemia or direct cardiotoxicity. Evidence of hepatocellular necrosis appears at this stage with jaundice, bleeding, hypoglycaemia, encephalopathy and positive anion gap metabolic acidosis. Poor tissue perfusion may lead to renal failure. Rarely, gastric scarring causing stricture or pyloric stenosis (alone or in combination) may lead to partial or complete bowel obstruction 2-5 weeks after ingestion.
**Folic Acid**

No cases of acute overdosage appear to have been reported, but even extremely high doses are unlikely to cause harm to patients. No special procedures or antidote are likely to be needed.

**Vitamin B12**

Overdosage is unlikely to require treatment.

**Zinc Sulphate Monohydrate**

Zinc sulfate is corrosive in overdosage. Symptoms are corrosion and inflammation of the mucous membrane of the mouth and stomach; ulceration of the stomach followed by perforation may occur. Gastric lavage and emesis should be avoided. Demulcents such as milk should be given. Chelating agents such as sodium calcium edetate may be useful.

## 5. Pharmacological Properties

### 5.1. Pharmacodynamic properties

**Iron-III Hydroxide Polymaltose**

Iron is an essential constituent of the body, and is necessary for haemoglobin formation and for the oxidative processes of living tissues. Iron and iron salts should be given for the treatment or prophylaxis of iron deficiency anaemias. Preparations of iron are administered by mouth, by intramuscular or intravenous injection.

Soluble ferrous salts are most effective by mouth. Ferrous fumarate is an easily absorbed source of iron for replacement therapy. It is a salt of ferrous iron with an organic acid and is less irritant to the gastro-intestinal tract than salts with inorganic acids.

**Folic Acid**

ATC Code: B03B B

After conversion into co-enzyme forms it is concerned in single carbon unit transfers in the synthesis of purines, pyrimidines and methionine.

**Vitamin B12**

This medicine contains cyancobalamin vitamin $B_{12}$, which is used for the treatment of pernicious anaemia, and nutritional deficiencies of vitamin $B_{12}$ which results in macrocytic anaemia.

**Zinc Sulphate Monohydrate**

Pharmacotherapeutic Group: Mineral Supplement, ATC Code: A12CB01

Zinc is an essential trace element involved in many enzyme systems. Severe deficiency causes skin lesion, alopecia, diarrhoea, increased susceptibility to infections and failure to thrive in children. Symptoms of less severe deficiency include distorted or absent perceptions of taste and smell and poor wound healing.

### 5.2 Pharmacokinetic Properties

**Iron-III Hydroxide Polymaltose**

In the acid conditions of the gastric contents, ferrous fumarate is dissociated and ferrous ions are liberated. These ions are absorbed in the proximal portion of the duodenum.

The ferrous iron absorbed by the mucosal cells of the duodenum is oxidised to the ferric form, and this is bound to protein to form Ferritin.

Ferritin in the mucosal cells releases iron into the blood, where it is bound to transferrin and passed into the iron stores - liver, spleen, and bone marrow.

These stores are a reserve of iron for synthesis of haemoglobin, myoglobin, and iron containing enzymes.

Iron is lost from the body through loss of cells in urine, faeces, hair, skin, sputum, nails, and mucosal cells, and through blood loss.

Ferrous fumarate has the same pattern of absorption and excretion as dietary iron.

**Folic Acid**

About 70 – 80 % of a 2 mg oral solution of folic acid is absorbed. Larger doses are probably equally well absorbed. It is distributed into plasma and extracellular fluid. In plasma, folate is bound weakly to albumin (70 %). There is a further high affinity binder for folate but this has a very low capacity and is barely detectable in normal sera. About 70 % of small doses of folate (about 1 mg) are retained and the rest excreted into the urine. With larger doses most is excreted into the urine. With a 5 mg dose of folate, urinary excretion will be complete in about five hours. There is an enterohepatic circulation of folate. The retained folate is taken into cells and reduced by dihydrofolate to tetrahydrofolate. Folic acid is a relatively poor substrate for folate reduction, the normal substrate being dihydrofolate.

Folic acid itself does not occur in natural materials, it is entirely a pharmacological form of the compound. Once reduced, folate has additional glutamic acid residues added, a folate pentaglutamate being the dominant intracellular analogue. These polyglutamates are the active co-enzymes.

**Vitamin B12**

The absorption of cobalamins from the gut is dependent upon the glycoprotein intrinsic factor. Cobalamins are transported rapidly into the blood bound to protein, known as transcobalamins. Cobalamins are stored in the liver and excreted in the bile. They are known to cross the placenta.

**Zinc Sulphate Monohydrate**

Zinc is absorbed from the gastrointestinal tract and distributed throughout the body. The highest concentrations occur in hair, eyes, male reproductive organs and bone. Lower levels are present in liver, kidney and muscle. In blood 80% is found in erythrocytes. Plasma zinc levels range from 70 to 110µg/dL and about 50% of this is loosely bound to albumin. About 7% is amino-acid bound and the rest is tightly bound to alpha 2-macroglobulins and other proteins.

**5.3. Preclinical safety data**

Not Further data

**6. Pharmaceutical Particulars**

**6.1. List of excipients**

N/A

**6.2. Incompatibilities**

None

**6.3. Shelf life**

24 Months.

### 6.4 Special precautions for storage

Store below above 30 $^{o}$C.
Store in the original package, in order to protect from moisture.

### 6.5. Nature and contents of container

Each unit carton contains one 200 ml plastic Bottle with Package insert.

### 6.6. Instruction for use and handling

No special requirements.

### 7.0 Registrant

Eastleigh Pharmaceuticals Co. Ltd
P.O Box 167-00610 Nairobi, Kenya

### 8.0 Manufacturer

MARS REMEDIES PVT LTD
Address: 635, GIDC Estate, Waghodia-391760, Vadodara, GUJARAT INDIA

### 9.0 Date of Publication or Revision

Last revised on 04-October-2020

### 10. DOSIMETRY (IF APPLICABLE)

Not Applicable

### 11. Instructions for Preparation of Radiopharmaceuticals (If Applicable):

Not Applicable