1.3.1 SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE MEDICINAL PRODUCT

PRODUCT NAME: FERROL SYRUP

BRAND NAME: Ferric Ammonium citrate, Folic Acid and Vitamin B12 Syrup

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

PRODUCT NAME: FERROL SYRUP

Each 10ml contains

Ferric Ammonium citrate BP…	83 mg
(Equivalent to elemental iron……....	17mg
Folic Acid BP…….	1.5 mg
Vitamin B12 (cyanocobalamin) BP	50 mcg
Excipients……...……	q.s

For complete list of excipients refer section 6.1.

3. PHARMACEUTICAL FORM:

A Caramel colored flavored syrup. Filled in a 200 ml amber pet bottles with cap printed with "SAGAR" logo . Packed in a mono carton .

4. CLINICAL PARTICULARS

4.1 Therapeutic Indication:

FERROL Syrup is indicated for

• Iron deficiency anemia due to chronic blood loss, hook-worm infestation, inadequate intake of iron, etc.

• Dimorphic anemia due to deficiency of Iron, Folic Acid and /or Vitamin B12 (Cyanocobalamin).

• Anemia of pregnancy and lactation.

• Tonic in general weakness, lack of appetite, rundown conditions and convalescence.

• Post surgery and other debilitated states

4.2 Posology and method of administration:

For Adults: 2 teaspoonful or 10ml three times daily.

Prophylactic dose: 1 teaspoonful or 10 ml once or twice daily.

For Children: 1 teaspoonful or 10 ml once or twice daily or as advised by the Physician.

Recommended use: for 30 days or more as per medical advice.

Method of administration

Ferrol syrup is to be administered orally

For oral use

Do not exceed the stated dose.

Keep out of the sight and reach of children.

4.3 Contraindications:

• Primary (idiopathic) or secondary iron storage disease.

• Anemia is associated with ineffective erythropoiesis, marrow hypoplasia, sideroblastic change, uncomplicated Cyanocobalamin, or folate deficiency.

• Intestinal disease (oral iron may aggravate severe acute inflammatory intestinal disease and is ineffective in patients with extensive small intestinal disease e.g., celiac sprue.)

• Previous hypersensitivity to any of the ingredients in the syrup.

• Known idiosyncrasy to commonly used excipients.

• Porphyria cutanea tardia.

• Uncontrolled parathyroid disease, sickle cell patients.

4.4 Special warning and precautions for use

• Iron compounds should not be given to patients receiving repeated blood transfusions or to patients with anemia not produced by iron deficiency unless iron deficiency is also present.

• Care should be taken in patients with iron storage our iron absorption diseases such as haemochromatosis, hemoglobinopathies or existing gastro-intestinal diseases such as inflammatory bowel disease, intestinal structures and diverticulae.

• Liquid preparations of iron salts should be swallowed through a straw to prevent discoloration of the teeth

4.5 Drug Interactions

• Compounds containing Calcium and Magnesium including antacids and mineral supplements and bicarbonates, carbonates, oxalates, or phosphates, may also impair the absorption of iron by the formation of insoluble complexes.

• Similarly, absorption of both iron & tetracyclines is diminished when they are taken concomitantly by mouth. If treatment with both drugs is required, a time interval of about 2 to 3 hours should be allowed between them.

• Avoid milk and dairy products for at least for 2 hours.

• Some agents such as Ascorbic Acid & Citric Acid may actually increase the absorption of iron.

• The response to iron may be delayed in patients receiving concomitant parenteral chloramphenicol therapy.

• Iron salts can decrease the absorption of bisphosphonates, fluoroquinolones, levodopa, methyldopa, penicillamine and tetracycline. • Iron salts may reduce the efficacy of thyroxine.

4.6 Pregnancy & Lactation

Pregnancy and Lactation

Can be used in Iron deficiency anemia during Pregnancy after considering risk benefit ratio

4.7 Effects on ability to drive and use machines:

Ferrol Syrup has no influence on the ability to drive or use machines.

4.8 Adverse Effects

Ferric Ammonium Citrate: In high or toxic doses or poisoning - Gastrointestinal irritation, abdominal pain with nausea, vomiting and either diarrhoea or constipation. Cardiovascular disorders such as

hypotension, tachycardia, metabolic changes including acidosis and hypoglycemia. CNS depression ranging from lethargy to coma.

Folic acid: Almost nontoxic in man and no adverse effects have been reported except a rare and doubtful allergic reaction.

Cyanocobalamin: No known side effects even with very large doses

4.9 Overdose

The most sign & Symptoms of overdosage are Gastrointestinal irritation, abdominal pain with nausea, vomiting and either diarrhoea or constipation. Cardiovascular disorders such as hypotension, tachycardia, metabolic changes including acidosis and hypoglycemia. CNS depression ranging from lethargy to coma.

5. PHARMACOLOGICAL PROPERTIES:

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Hematinic syrup

ATC code: **B03AE01**

Mechanism of action

Ferric Ammonium Citrate: Ferric Ammonium Citrate is one of the best-tolerated iron supplements. It rapidly supplements elemental iron so that iron deficiency is quickly controlled, thus leading to faster correction of anemia and replenishment of tissue iron stores.

Folic Acid: It is so called because it is present in green leaves, which is chemically pteroylglutamic acid. It is a growth promoter. It helps in the synthesis of Deoxyribose Nucleic Acid (DNA), the building block of life. It is essential for proper maturation of red cells. It helps in inter conversion and metabolism of amino acids.

Cyanocobalamin: Cyanocobalamin (Vitamin B12) is a complex organo-metallic compound in which a cobalt atom is placed within a corrin ring. It plays an important role in synthesis of DNA and maturation of red cells. It acts as a co-enzyme in certain steps necessary for genetic replication

5.2 Pharmacokinetic Properties

Iron (Ferric Ammonium Citrate): Iron irregularly and incompletely absorbed from the gastrointestinal tract, the main sites of absorption being the duodenum and jejunum. Absorption is aided

by the acid section of the stomach and by some dietary acids (such as ascorbic acid) and is more readily affected when the iron is in the ferrous state or is part of the haem complex (haem-iron). Absorption is also increased in conditions of iron deficiency or in the fasting state but is decreased if the body stores are overloaded. Only about 5 to 15% of the iron ingested in food is normally absorbed. Most absorbed iron is bound to transferrin and transported to the bone marrow where it is incorporated into hemoglobin; the remainder is contained within the storage forms, ferritin or hemosiderin, or as myoglobin, with smaller amounts occurring in haem- containing enzymes or in plasma bound to transferrin. Only very small amounts of iron are excreted as the majority released after the destruction of the hemoglobin molecule is re-used.

Folic Acid: Folic acid is rapidly absorbed from the gastro-intestinal tract, mainly from the duodenum and jejunum. Folic acid administered therapeutically enters the portal circulation largely unchanged since it is a poor substrate for reduction by dihydrofolate reductase. It is converted to the metabolically active form 5-methyltetrahydrofolate in the plasma and liver. The principal storage site of folate is the liver; it is also actively concentrated in the CSF. Folate undergoes enterohepatic circulation. Folate metabolites are eliminated in the urine and folate in excess of body requirements is excreted unchanged in the urine. Folate is distributed into breast milk. Folic acid is removed by hemodialysis.

Cyanocobalamin: Cyanocobalamin binds to intrinsic factor, a glycoprotein secreted by the gastric mucosa, and are then actively absorbed from the gastro-intestinal tract. Absorption is impaired in patients with an absence of intrinsic factor, with a malabsorption syndrome or with disease or abnormality of the gut, or after gastrectomy. Absorption from the gastro-intestinal tract can also occur by passive diffusion. Cyanocobalamin is extensively bound to specific plasma proteins called transcobalamins; transcobalamin II appears to be involved in the rapid transport of the cobalamins to tissues. Cyanocobalamin is stored in the liver, excreted in the bile and undergoes extensive enterohepatic recycling; part of an administered dose is excreted in the urine, most of it in the first 8 hours; urinary excretion, however, accounts for only a small fraction in the reduction of total body stores acquired by dietary means. Cyanocobalamin diffuses across the placenta and appears in breast milk.

5.3 Preclinical Safety Data:

Toxicology

Iron: Iron is a general cellular poison and is directly corrosive to the GI mucosa.

Cellular toxicity

The absorption of excessive quantities of ingested iron results in systemic iron toxicity. Severe overdose causes impaired oxidative phosphorylation and mitochondrial dysfunction, which can result in cellular death. The liver is one of the organs most affected by iron toxicity, but other organs such as the heart, kidneys, lungs, and the hematologic systems also may be impaired.

MILD TO MODERATE POISONING: Vomiting and diarrhea may occur within 6 hours of ingestion.

SEVERE POISONING: Severe vomiting and diarrhea, lethargy, metabolic acidosis, shock, GI hemorrhage, coma, seizures, hepatotoxicity, and late onset GI strictures.

Folic acid: The risk of toxicity from folic acid is low because folate is a water-soluble vitamin and is regularly removed from the body through urine. One potential issue associated with high dosages of folic acid is that it has a masking effect on the diagnosis of pernicious anemia (vitamin B12 deficiency).

Vitamin B12: Vitamin B12 is usually considered a non-toxic substance. Even taking it by injection at high doses does not seem to increase the risk for toxicity.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

List of Excipients: Glycerin, Methyl Paraben Sodium, Propyl Paraben Sodium, Sucrose, Sodium Benzoate, Sodium Saccharine, Sodium Hydroxide, Xanthan Gum, Color Caramel, Color Erythrosine supra, Flavor Raspberry Flavour strawberry, Citric Acid.

6.2 Incompatibilities

Not Applicable

6.3 Shelf Life

24 Months.

Discard the bottle 4 months after opening, even if there is syrup remaining.

6.4 Special precautions for storage:

Store below 30° C. Store in the original package.

6.5 Nature and contents of container

Ferrol Syrup is a Caramel colored flavored syrup

Ferrol Syrup is packed 200 ml Amber Pet bottles with ROPP cap Printed with “SAGAR”. Logo in a printed outer carton

6.6 Special precautions for disposal and other handling

Any unused product or waste material should be disposed of in accordance with local requirements

7. APPLICANT

Name of the Applicant:

SAGAR VITACEUTICALS NIGERIA LIMITED

Business Address:
Commercial District B block,
Plot 6, New Makun City,
Along Lagos/Ibadan Expressway,
Klm 53/55 Sagamu, Ogun state.
NIGERIA.

Manufactured by:

SAGAR VITACEUTICALS NIGERIA LIMITED.
Commercial District B block,
Plot 6, New Makun City,
Along Lagos/Ibadan Expressway,
Klm 53/55 Sagamu, Ogun state.
NIGERIA.

8. WHO PREQUALIFICATION REFERENCE NUMBER-
Not applicable

9. DATE OF PREQUALIFICATION / RENEWAL OF PREQUALIFICATION-
Not applicable

10. DATE OF REVISION OF THE TEXT-
Not applicable