SUMMARY OF PRODUCT CHARACTERISTICS (SmPC)

1. Name of the medicinal product

TOPCEE® 1000

2. Qualitative and quantitative composition

Each sweet flavored effervescent tablet contains
Ascorbic acid…….1000mg

Excipient(s) with known effect

Lactose monohydrate

For the full list of excipients, see section 6.1.

3. Pharmaceutical form

Effervescent tablet

White sweet flavored circular, flat faced, bevelled edge effervescent tablets.

4. Clinical particulars

4.1 Therapeutic indications.

TOP CEE 1000® (Vitamin C) is a vitamin. Vitamin C is required for the proper development and function of many parts of the body. It also plays an important role in maintaining proper immune function.

Historically, vitamin C was used for preventing and treating scurvy. These days, vitamin C is used most often for preventing and treating the common cold. Some people use it for other infections including gum disease, acne and other skin infections, bronchitis, human immunodeficiency virus (HIV) disease, stomach ulcers caused by bacteria called Helicobacter pylori, tuberculosis, dysentery (an infection of the lower intestine), and skin infections that produce boils (furunculosis). It is also used for infections of the bladder and prostate.

TOP CEE 1000 ® (vitamin C) is also indicated in patients with depression, thinking problems, dementia, Alzheimer's disease, physical and mental stress, fatigue, and attention deficit-hyperactivity disorder (ADHD).

Other uses include increasing the absorption of iron from foods and correcting a protein imbalance in certain newborns (tyrosinemia).

There is some thought that vitamin C might help the heart and blood vessels. It is used for hardening of the arteries, preventing clots in veins and arteries, heart attack, stroke, high blood pressure, and high cholesterol.

TOP CEE 1000 ® Vitamin C is also used for glaucoma, preventing cataracts, preventing gallbladder disease, dental cavities (caries), constipation, Lyme disease, boosting the immune system, heat stroke, hay fever, asthma, bronchitis, cystic fibrosis, infertility, diabetes, chronic fatigue syndrome (CFS), autism, collagen disorders, arthritis and bursitis, back pain and disc swelling, cancer, and osteoporosis.

Additional uses include improving physical endurance and slowing aging, as well as counteracting the side effects of cortisone and related drugs, and aiding drug withdrawal in addiction.

4.2 Posology and method of administration

Posology

CONDITION OF ADMINISTRATION:

Usual Adult Dose for Dietary Supplement: 50 to 200 mg/day.

Usual Adult Dose for Urinary Acidification: 4 to 12 g/day in 3 to 4 divided doses.

Usual Adult Dose for Scurvy: 100 to 250 mg once or twice daily for a minimum of two weeks.

Usual Pediatric Dose for Dietary Supplement: 35 to 100 mg/day.

Usual Pediatric Dose for Urinary Acidification : 500 mg every 6 to 8 hours.

Usual Pediatric Dose for Scurvy: 100 to 300 mg/day in divided doses for a minimum of two weeks.

Renal Dose Adjustments: Data not available

Liver Dose Adjustments: Data not available

Dialysis: Ascorbic acid is dialyzable and supplementation may be necessary. There are no data on the precise supplementation dose needed; however, <= 500 mg orally daily is recommended.

Method of administration: The effervescent tablets should be dissolved in a glass of water (approx. 200 ml) and drink immediately after reconstitution.

4.3 Contraindications

Hypersensitivity to the active substance, lactose monohydrate, aspartame sweet or to any of the excipients listed in section 6.1.

Ascorbic acid should not be given to patients with hyperoxaluria.

4.4 Special warnings and precautions for use

Increased intake of ascorbic acid over a prolonged period may result in an increased renal clearance of ascorbic acid, and deficiency may result if the intake is reduced or withdrawn rapidly (see section 4.8).

Interference with serological testing

Ascorbic acid may interfere with tests and assays for urinary glucose, giving false-negative results with methods utilising glucose oxidase with indicator (e.g. Labstix, Tes-Tape) and false-positive results with neocuproine methods.

Estimation of uric acid by phosphotungstate or uricase with copper reduction and measurement of creatinine in non-deproteinised serum may also be affected.

High doses of ascorbic acid may give false-negative readings in faecal occult blood tests.

Patients with rare hereditary problems of galactose intolerance, total lactase deficiency or glucose-galactose malabsorption should not take this medicine.

4.5 Interaction with other medicinal products and other forms of interaction

Ascorbic acid increases the renal excretion of amphetamine. The plasma concentration of ascorbate is decreased by smoking and oral contraceptives.

Ascorbic acid increases the absorption of iron.

Concomitant administration of aspirin and ascorbic acid may interfere with absorption of ascorbic acid. Renal excretion of salicylate is not affected and does not lead to reduced anti-inflammatory effects of aspirin.

Concomitant administration of aluminium-containing antacids may increase urinary aluminium elimination. Concurrent administration of antacids and ascorbic acid is not recommended, especially in patients with renal insufficiency.

Co-administration with amygdalin (a complementary medicine) can cause cyanide toxicity.

Concurrent administration of ascorbic acid with desferrioxamine enhances urinary iron excretion. Cases of cardiomyopathy and congestive heart failure have been reported in patients with idiopathic haemochromatosis and thalassaemias receiving desferrioxamine who were subsequently given ascorbic acid. Ascorbic acid should be used with caution in these patients and cardiac function monitored.

Ascorbic acid may interfere with biochemical determinations of creatinine, uric acid and glucose in samples of blood and urine.

4.6 Fertility, pregnancy and lactation

Pregnancy: For ascorbic acid no clinical data on exposed pregnancies are available. Animal studies do not indicate direct or harmful effects with respect to pregnancy, embryonal/foetal development, parturition or postnatal development. Pregnant women should exercise caution.

Breast-feeding: Ascorbic acid is excreted in breast milk. Though again caution should be exercised, no evidence exists suggesting such excretion is hazardous to the infant.

4.7 Effects on ability to drive and use machines

On the basis of the product's pharmacodynamic profile and reported adverse events, ascorbic acid has no known effect on an individual's ability to drive or operate machinery.

4.8 Undesirable effects

Nervous system disorders: headache.

Vascular disorders: flushing.

Gastrointestinal disorders: nausea, vomiting and stomach cramps. Large doses of ascorbic acid may cause diarrhoea.

Skin and subcutaneous tissue disorders: redness of skin.

Renal and urinary disorders: Patients known to be at risk of hyperoxaluria should not ingest ascorbic acid doses exceeding 1g daily as there may be increased urinary oxalate excretion. However, such risk has not been demonstrated in normal, non-hyper oxaluric individuals. Ascorbic acid has been implicated in precipitating haemolytic anaemia in certain individuals deficient of glucose-6-phosphate dehydrogenase.

Increased intake of ascorbic acid over a prolonged period may result in increased renal clearance of ascorbic acid, and deficiency may result if the intake is reduced or withdrawn rapidly. Doses of more than 600mg daily have a diuretic effect.

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

4.9 Overdose

Symptoms: At doses of over 3g per day unabsorbed ascorbic acid is mainly excreted unmetabolised in the faeces. Absorbed ascorbic acid additional to the body's needs is rapidly eliminated. Large doses of ascorbic acid may cause diarrhoea and the formation of renal oxalate calculi. Symptomatic treatment may be required.

Ascorbic acid may cause acidosis or haemolytic anaemia in certain individuals with a deficiency of glucose 6-phosphate dehydrogenase. Renal failure can occur with massive ascorbic acid overdosage.

Management: Gastric lavage may be given if ingestion is recent otherwise general supportive measure should be employed as required.

5. Pharmacological properties

5.1 Pharmacodynamic properties
Pharmacotherapeutic group: Vitamins – Ascorbic acid (vitamin C), plain

ATC code: A11GA01

Ascorbic acid, coupled with dehydroascorbic acid to which it is reversibly oxidised, has a variety of functions in cellular oxidation processes. Ascorbic acid is required in several important hydroxylations, including the conversion of proline to hydroxyproline (and thus collagen formation e.g. for intercellular substances and during wound healing); the formation of the neurotransmitters 5-hydroxytryptamine from tryptophan and noradrenaline from dopamine, and the biosynthesis of carnitine from lysine and methionine. Ascorbic acid appears to have an important role in metal ion metabolism, including the gastrointestinal absorption of iron and its transport between plasma and storage organs. There is evidence that ascorbic acid is required for normal leucocyte functions and that it participates in the detoxification of numerous foreign substances by the hepatic microsomal system. Deficiency of ascorbic acid leads to scurvy, which may be manifested by weakness, fatigue, dyspnoea, aching bones, perifollicular hyperkeratosis, petechia and ecchymosis, swelling and bleeding of the gums, hypochromic anaemia and other haematopoietic disorders, together with reduced resistance to infections and impaired wound healing.

5.2 Pharmacokinetic properties

Absorption: Ascorbic acid is well absorbed from the gastrointestinal tract.

Distribution: Ascorbic acid is widely distributed to all tissues. Body stores of ascorbic acid normally are about 1.5g. The concentration is higher in leucocytes and platelets than in erythrocytes and plasma.

Elimination: Ascorbic acid additional to the body's needs, generally amounts above 200mg daily, is rapidly eliminated; unmetabolised ascorbic acid and its inactive metabolic products are chiefly excreted in the urine. The amount of ascorbic acid excreted unchanged in the urine is dose-dependent and may be accompanied by mild diuresis.

5.3 Preclinical safety data

There are no pre-clinical data of relevance to the prescriber which are additional to that already included in other sections of the Smpc.

6. Pharmaceutical particulars

6.1 List of excipients

Tablet core: Povidone (PVP k-30), Corn starch, Stearic acid, Lactose anhydrous, Methyl paraben, Aspartame sweet, Sunset Yellow, Flavor, Sodium bicarbonate, Citric acid, Crospovidone, Purified Talcum powder.

6.2 Incompatibilities

Not applicable.

6.3 Shelf life

3 years

6.4 Special precautions for storage

Do not store above 30°C

Keep the medicine away from light and moisture.

6.5 Nature and contents of container

TOPCEE ® 1000MG EFFERVESCENT TABLET is available as Alu PVC blister sachets of 10 effervescent tablets, packed in a printed carton along with patient information leaflet.

6.6 Special precautions for disposal and other handling

No special instructions.

7. Marketing authorisation holder

NEMEL Pharmaceuticals Limited

Plot 35 Emene Industrial Layout

Enugu, Nigeria.