SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE MEDICINAL PRODUCT

1.1 Name of the finished pharmaceutical product
PROLONGED-RELEASE POTASSIUM CHLORIDE TABLETS BP 600 MG

1.2 Strength
POTASSIUM CHLORIDE 600 mg

2. QUALITATIVE AND QUANTITATIVE COMPOSITION
Each film coated prolonged-release tablet contains:
Potassium chloride BP.....600 mg
Excipients.....q.s.
Colour: Ponceau 4R

3. PHARMACEUTICAL FORM
Film coated tablet
Pink coloured, round shaped, biconvex, film coated tablet, prolonged release tablet, plain on both sides.

4. CLINICAL PARTICULARS

4.1. Therapeutic indications
For use in patients requiring supplemental potassium therapy.
Uses include:
Supplement to potassium depleting diuretics.
Hypokalaemia associated with prolonged corticosteroid therapy.
Where there is inadequate dietary intake due to poor dietary habits or malnutrition. Increased gastrointestinal potassium loss due for example to vomiting (except pyloric stenosis) or diarrhoea.
Increased renal potassium loss in primary or secondary hyperaldosteronism,Cushing's syndrome and renal tubular disease.
Altered transcellular shifts of potassium as in hypokalaemic familial periodic paralysis.

4.2. Posology and method of administration
Posology
It is important that the tablets should be swallowed whole, with fluid during meals, whilst the patient is sitting upright.

General Populations:

The dosage of Slow-K should be adjusted to the individual needs of each patient. 2-3 tablets daily are usually an adequate supplement to prevent hypokalaemia. In states of potassium deficiency doses of 5 to 6 tablets daily may be needed increasing up to 12 tablets daily in severe deficiency. If the dosage exceeds 16mmol K+ (2 tablets) it should be taken in divided doses. Where intermittent diuretic therapy is being used, it is advisable to give Slow K on intervening days between administration of the diuretic. The response to treatment should preferably be monitored by repeat determination of plasma potassium and Slow K continued until the hypokalaemia has been corrected.

Special populations
Renal impairment
In patients with mild to moderate renal impairment, Slow K should be given with extreme caution with frequent serum potassium monitoring due to increased risk of hyperkalemia. Slow-K is contraindicated in patients with severe renal impairment (see also section 4.3 Contraindications).

Hepatic impairment
No studies have been performed in hepatically impaired patients. However, Slow-K should be given with caution due to increased likelihood of electrolyte disturbances in patients with hepatic impairment (see also section 4.3 Contraindications).

Paediatrics
Safety and effectiveness in children have not been established, Slow-K is therefore not recommended for paediatric use.

Geriatrics (older than 65 years)
Slow-K should be given with caution and with frequent serum potassium monitoring due to increased risk of hyperkalemia.

Method of administration
For oral administration only.

4.3. Contra-indications
All forms of hyperkalaemia as may occur in marked renal failure (even when not yet associated with manifest hyperkalaemia), untreated Addison's disease, hyporeninaemic hypoaldosteronism, acute dehydration and conditions involving extensive cell destruction (e.g. severe burns).

Hypersensitivity to potassium administration e.g. hyperkalaemic periodic paralysis and congenital paramyotonia, or hypersensitivity to any of the excipients. Hyperkalemic periodic paralysis: It is an inherited autosomal dominant disorder which affects sodium channels in muscle cells and the ability to regulate potassium levels in the blood. The term hyperkalemic is misleading since patients are often normokalemic during attacks. The fact that attacks are precipitated by potassium administration best defines the disease.

All solid forms of potassium medication are contraindicated in the presence of obstructions in the digestive tract (e.g. resulting from compression of the oesophagus due to dilation of the left atrium or from stenosis of the gut).

In cases of metabolic acidosis, the hypokalaemia should be treated not with potassium chloride but with an alkaline potassium salt (e.g. potassium bicarbonate).

Concomitant treatment with potassium sparing diuretics (e.g. spironolactone, triamterene, amiloride) (See also section 4.5 Interaction with other medicinal products and other forms of interaction).

Patients with rare hereditary problems of fructose intolerance, glucose-galactose malabsorption or sucrase-isomaltase insufficiency should not take this medicine.

4.4. Special warnings and special precautions for use

Gastrointestinal disorders

Potassium chloride, alone or in combination with other medications may induce ulceration in the gastrointestinal tract, in particular the lower oesophagus and small bowel. This possibility is increased in patients with local, functional or mechanical disorders of the gastrointestinal tract, with cardiovascular disease, or in those on prolonged therapy or receiving anticholinergics. Symptoms or signs suggesting ulceration or obstruction of the tract should be regarded as reasons to discontinue medication immediately (See also section 4.8 Undesirable effects).

Patients with ostomies may have altered intestinal transit times and are better treated with other forms of potassium salts.

The insoluble tablet matrix may be present in the faeces. Patients should be advised that this is normal.

Hyperkalaemia

Potassium salts should only be administered with extreme caution to patients with renal dysfunction, hepatic disease (because of the risk of hyperkalaemia), history of or existent peptic ulceration. Monitoring of serum potassium and othe relectrolytes is particularly necessary in patients with diseases of the heart and kidneys.

Slow K should be used with caution in patients receiving any drug known to have a potential for hyperkalaemia, such as ACE inhibitors, angiotenin–II-receptor antagonists, NSAIDs (e.g. indomethacin), beta-blockers, heparin, digoxin and ciclosporin (see also section 4.5 Interaction with other medicinal products and other forms of interaction).

Treatment Monitoring

Periodic serum potassium determinations are recommended during long term supplementation, especially in clinical conditions which carry a risk of hyperkalaemia (e.g. impaired renal function or heart disease) (see also section 4.5 Interaction with other medicinal products and other forms of interaction).

Other

In some patients, diuretic induced magnesium deficiency will prevent restoration of intracellular deficits of potassium so that hypomagnesaemia should be corrected at the same time as hypokalaemia.

Slow-K contains sucrose (= saccharose). Patients with rare hereditary disorders like fructose-intolerance, glucose-galactose malabsorption, or sucrase-isomaltase insufficiency should not use this medicine.

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

Observed Interactions resulting in a contraindication

Potassium-sparing diuretics:

Concomitant treatment with potassium-sparing diuretics (spironolactone, triamterene, amiloride) is contraindicated (see also section 4.3 Contraindications). Drugs which interfere with potassium excretion may promote hyperkalemia when given together with Slow-K.

Anticipated interactions resulting in concomitant use not being recommended

Drugs causing hyperkalemia:

Slow-K should be used with caution in patients receiving any drug known to have a potential for hyperkalemia, such as ACE inhibitors, angiotensin-II-receptor-antagonists, NSAIDs (e.g.

indomethacin), beta-blockers, heparin, digoxin ciclosporin (see also section 4.4 Special warnings and precautions for use).

Interactions to be considered

Drugs causing hyperkalemia:
Other drugs such as direct renin inhibitors (e.g. aliskerin) and proton pump inhibitors can cause hyperkalemia when used concomitantly with Slow-K. Thus, caution should be exercised in their concomitant use.

Anticholinergics:
Since anticholinergic drugs may reduce gastrointestinal motility, they should be prescribed with great care when given concomitantly with solid oral potassium preparations, particularly in high dosage (see also section 4.4 Special warnings and precautions for use).

4.6. Fertility, pregnancy and lactation

Pregnancy
For Slow-K no clinical data on exposed pregnancies are available.
There is no indication in animal studies of direct or indirect harmful effects with respect to pregnancy, embryonal/foetal development, parturition or postnatal development (see also section 5.3 Preclinical safety data).

Breast-feeding
The excretion of potassium in milk has not been studied in animals or human.
As a general rule, no drugs should be taken during the first three months of pregnancy and the risks and benefits of taking drugs should be carefully considered throughout pregnancy.
Because of gastrointestinal hypomotility associated with pregnancy, solid forms of oral potassium preparations should be given to pregnant women only if considered essential.
The normal K+ content of human milk is about 13mmol/litre. Since oral potassium becomes part of the body's potassium pool, provided this is not excessive, Slow K can be expected to have little or no effect on the potassium level in human milk.
Slow-K should only be given during breast-feeding when the expected benefit to the mother outweighs the potential risk to the baby.

Fertility
There are no special recommendations.

4.7. Effects on ability to drive and use machines
None known.

4.8. Undesirable effects
Side-effects are rare with Slow-K, as any excess potassium is rapidly excreted in the urine.

Adverse drug reactions from post-marketing experience (frequency not known)

The following adverse drug reactions have been derived from post-marketing experience with Slow-K. Because these reactions are reported voluntarily from a population of uncertain size, it is not possible to reliably estimate their frequency which is therefore categorized as not known. Adverse drug reactions are listed according to system organ classes in MedDRA. Within each system organ class, ADRs are presented in order of decreasing seriousness.

Table 4-1 Adverse drug reactions from post-marketing experience (frequency not known)

Gastrointestinal disorders
Gastrointestinal obstruction, gastrointestinal hemorrhage, gastrointestinal ulcer, with or without perforation of the upper or lower GIT. Nausea, flatulence, vomiting, abdominal pain, diarrhea
Skin and subcutaneous tissue disorders
Urticarial, rash, pruritus
Metabolism and nutrition disorders
Hyperkalemia can develop in patients having difficulties, either with renal potassium excretion or with internal disposal(metabolism).

4.9 Overdose
The clinical picture of acute overdosage (intoxication) with potassium is characterized chiefly by hyperkalemia together with cardiovascular and neuromuscular disturbances, which, in the presence of renal impairment, may already develop after relatively low doses of Slow-K. Presence of radiopaque tablets on abdominal X-ray, will confirm the ingestion.

Cardiovascular system
Hypotension, shock, ventricular arrhythmias, bundle-branch block, ventricular fibrillation leading possibly to cardiac arrest.
Besides elevation of serum potassium concentration, typical ECG changes are also encountered (increasing amplitude and
peaking of T waves, disappearance of P wave, widening of QRS complex and S-T segment depression).

Central nervous system and muscles
Paraesthesiae, convulsions, areflexia, flaccid paralysis of striated muscle leading possibly to respiratory paralysis.

Pharmacobezoar
Rare cases of pharmacobezoar have been reported in association with large overdose of Slow-K tablets. Formation of pharmacobezoar may cause continual release of potassium chloride, hours after drug ingestion.

Treatment
In cases of acute poisoning, remove and/or inactivate excess potassium by:
 Induction of vomiting
 Gastric lavage
 Administration of cation exchange resin by mouth or gastric instillation (e.g. 20 g sodium polystyrene sulfonate with 20 mL 70% sorbitol solution).
 In case of moderate/severe hyperkalemia, standard treatment should be initiated after monitoring the serum potassium levels and should be managed accordingly.
 In case of pharmacobezoar consideration should be given to vigorous gastrointestinal decontamination procedures for effective removal of the pharmacobezoar which may include, but are not limited to, endoscopy or surgery in selected patients, depending on the size of bezoar and the number of tablets ingested.

5. PHARMACOLOGICAL PROPERTIES

5.1. Pharmacodynamic properties

Pharmacotherapeutic group: Potassium supplement, ATC Code: A12BA01

Mechanism of action

Potassium, as the most abundant intracellular cation, plays an essential role in several important physiological functions, including transmission of nerve impulses, contraction of cardiac, skeletal, and smooth-muscle tissues, and maintenance of normal renal function. It also aids in the regulation of osmotic pressure and the acid-based balance. Concentrations of K+ range in intracellular fluid from 130 to 150 up to 160 mmol/L and in plasma from 3.5 to 5 mmol/L.

Although there is no uniform correlation between plasma concentrations of potassium and total body stores, clinical signs of K+ deficiency are usually observed whenever the plasma potassium concentration falls below 3.5 mmol/L (hypokalemia). These signs include: impaired neuromuscular function, which may vary from minimal weakness to frank paralysis; intestinal dilatation and ileus; and, more frequently, abnormalities myocardial function with disturbed ECG patterns characterized by a prolonged PR interval, an exaggerated U wave, a broad and flat T wave, and a depressed ST segment.

Hypokalemia can be prevented and/or corrected by giving supplementary potassium. Apart from increasing dietary intake of potassium-rich foods, which may not always be practicable, a suitable alternative is to administer Slow-K. In view of the frequency with which deficits of K+ and CL- coexist, potassium chloride is the preferred salt for most of the clinical conditions associated with hypokalemia.

5.2. Pharmacokinetic properties

Absorption

Following a single dose of Slow K, potassium chloride is released over a period of approximately 4 hours. Renal excretion of potassium chloride following ingestion of Slow K occurs 30-60 minutes later than when the same dose is given in the form of a solution.

Elimination

In the presence of a normal potassium balance 90% of the potassium supplied by Slow K is excreted renally within 8 hours and more than 98% by 24 hours.

The Slow-K tablet matrix is not absorbed and is excreted in the faeces; in some instances, it may be noticeable in the stool. The release of matrix in the faeces does not relate to any loss of efficacy of the drug.

Special population

Elderly Patients

No pharmacokinetics studies of potassium chloride are reported in elderly population. However, these patients are more likely to develop hyperkalemia due to physiological changes, and reduced renal function.

Pediatrics

No pharmacokinetics studies of potassium chloride are reported in the pediatric population.

Hepatic impairment
No pharmacokinetics studies of potassium chloride are reported in patients with hepatic impairment.

Renal impairment
Potassium is almost completely excreted via urine and its excretion rate highly correlates with the glomerular filtration rate.
Considering the possibility of hyperkalemia in these patients and severity of outcome, Slow-K is contraindicated in patients with severe renal impairment. If used in patients with mild to moderate renal impairment, extreme caution along with frequent serum potassium monitoring is recommended.

5.3. Preclinical safety data
Preclinical data do not support a special hazard for humans based on conventional studies of acute toxicity, repeated dose toxicity, genotoxicity, carcinogenic potential and toxicity to reproduction.

The acute and repeated-dose oral toxicity of potassium chloride (KCl) in animals is low. Gastrointestinal irritant effects have been observed in rhesus monkeys at high oral dosages of Slow-K. Some positive results in in vitro genotoxicity assays were attributed to very high concentrations of KCl. Carcinogenicity studies in rats administered KCl in-feed were negative.
Limited information from oral developmental studies in rodents indicates there is no ill effect on offspring. There is no evidence from animal experiments that oral KCl exerts any teratogenic effects or reproductive toxicity which would be relevant to man.

6. PHARMACEUTICAL PARTICULARS
6.1.List of excipients

Name of Ingredients	Reference
Cetyl Alcohol	BP
Iso Propyl Alcohol	BP
Acetone	BP
Hydroxy Propyl methyl cellulose (E5 EP,5CPS)	BP
Magnesium Stearate	BP
Polyethylene glycol-6000	BP
Methylene Dichloride	BP
Ponceau 4R Lake	IH
Purified Talc	BP
Titanium Dioxide	BP

6.2. Incompatibilities
Not Applicable

6.3. Shelf life
36 months

6.4 Special precautions for storage
Store at temperature not exceeding 30°C.
Keep medicine out of reach of children.

6.5. Nature and contents of container
4 x 10 Alu-PVC Blister Pack

6.6. Special precautions for disposal
No special requirements.

7. MARKETING AUTHORISATION HOLDER AND MANUFACTURER MANUFACTURER
Health Care Formulations Pvt. Ltd.
C-8/1, Ajwa Rd, Sardar Estate, Sayaji Park Society,
Vadodara-390019. (Guj.) INDIA

8. MARKETING AUTHORISATION NUMBER
Not applicable.

9. DATE OF FIRST AUTHORISATION /RENEWAL OF THE AUTHORISATION
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10. DATE OF REVISION OF THE TEXT
