DESCRIPTION The K-DUR® 20 product is an immediately dispersing extended release oral dosage form of potassium chloride containing 1500 mg of microencapsulated potassium chloride, USP equivalent to 20 mEq of potassium in a tablet.

The K-DUR® 10 product is an immediately dispersing extended release oral dosage form of potassium chloride containing 750 mg of microencapsulated potassium chloride, USP equivalent to 10 mEq of potassium in a tablet.

These formulations are intended to slow the release of potassium so that the likelihood of a high localized concentration of potassium chloride within the gastrointestinal tract is reduced. K-DUR is an electrolyte replenisher. The chemical name of the active ingredient is potassium chloride, and the structural formula is KCl. Potassium chloride, USP occurs as a white, granular powder or as colorless crystals. It is odorless and has a saline taste. Its solutions are neutral to litmus. It is freely soluble in water and insoluble in alcohol.

K-DUR is a tablet formulation (not enteric coated or wax matrix) containing individually microencapsulated potassium chloride crystals which disperse upon tablet disintegration. In simulated gastric fluid at 37°C and in the absence of outside agitation, K-DUR begins disintegrating into microencapsulated crystals within seconds and completely disintegrates within 1 minute. The microencapsulated crystals are formulated to provide an extended release of potassium chloride.

Inactive Ingredients: Crospovidone, Ethyl-cellulose, Hydroxypropyl Cellulose, Magnesium Stearate, and Microcrystalline Cellulose.

CLINICAL PHARMACOLOGY The potassium ion is the principal intracellular cation of most body tissues. Potassium ions participate in a number of essential physiological processes including the maintenance of intracellular toxicity; the transmission of nerve impulses; the contraction of cardiac, skeletal, and smooth muscle; and the maintenance of normal renal function.

The intracellular concentration of potassium is approximately 150 to 160 mEq per liter. The normal adult plasma concentration is 3.5 to 5 mEq per liter. An active ion transport system maintains this gradient across the plasma membrane.

Potassium is a normal dietary constituent and under steady-state conditions the amount of potassium absorbed from the gastrointestinal tract is equal to the amount excreted in the urine. The usual dietary intake of potassium is 50 to 100 mEq per day.

Potassium depletion will occur whenever the rate of potassium loss through renal excretion and/or loss from the gastrointestinal tract exceeds the rate of potassium intake. Such depletion usually develops as a consequence of therapy with diuretics, primary or secondary hyperaldosteronism, diabetic ketoacidosis, or inadequate replacement of potassium in patients on prolonged parenteral nutrition. Depletion can develop rapidly with severe diarrhea, especially if associated with vomiting. Potassium depletion due to these causes is usually accompanied by a concomitant loss of chloride and is manifested by hypokalemia and metabolic alkalosis. Potassium depletion may produce weakness, fatigue, disturbances or cardiac rhythm (primarily ectopic beats), prominent U-waves in the electrocardiogram, and in advanced cases, fasciculation, paralytic ileus, and asphyxia. Management usually involves the administration of potassium chloride and thus to minimize the possibility of a high local concentration of potassium near the gastrointestinal wall.

Prospective trials have been conducted in normal human volunteers in which the upper gastrointestinal tract was evaluated by endoscopic inspection before and after one week of solid oral potassium chloride therapy. The ability of this model to predict events occurring in usual clinical practice is unknown. Trials which approximated usual clinical practice did not reveal any clear differences between the wax matrix and microencapsulated dosage forms. In contrast, there was a higher incidence of gastric and duodenal lesions in subjects receiving a high dose of a wax matrix controlled-release formulation under conditions which did not resemble usual or recommended clinical practice (ie, 96 mEq per day in divided doses of potassium chloride administered to fasted patients, in the presence of an anti-cholinergic drug to delay gastric emptying). The upper gastrointestinal lesions observed by endoscopy were not asymptomatic and were accompanied by evidence of bleeding (Hemoccult testing). The relevance of these findings to the usual conditions (ie, nonfasting, no anti-cholinergic agent, smaller doses) under which controlled release potassium chloride products are used is uncertain; epidemiologic studies have not identified an elevated risk, compared to microencapsulated products, for upper gastrointestinal lesions in patients receiving wax matrix formulations. K-DUR should be discontinued immediately and the possibility of ulceration, obstruction, or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.
Metabolic Acidosis: Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS General: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium. While acute alkalosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Information for Patients: Physicians should consider reminding the patient of the following:
To take each dose with meals and with a full glass of water or other liquid.
To take each dose without crushing, chewing, or sucking the tablets. If those patients are having difficulty swallowing whole tablets, they may try one of the following alternate methods of administration:
a. Break the tablet in half, and take each half separately with a glass of water.
b. Prepare an aqueous (water) suspension as follows:
   1. Place the whole tablet(s) in approximately 1⁄2 glass of water (4 fluid ounces).
   2. Allow approximately 2 minutes for the tablet(s) to disintegrate.
   3. Stir for about half a minute after the tablet(s) has disintegrated.
   4. Swirl the suspension and consume the entire contents of the glass immediately by drinking or by the use of a straw.
   5. Add another 1 fluid ounce of water, swirl, and consume immediately.
   6. Then, add an additional 1 fluid ounce of water, swirl, and consume immediately.
   Aqueous suspension of K-DUR tablets that is not taken immediately should be discarded. The use of other liquids for suspending K-DUR tablets is not recommended.

To take this medicine following the frequency and amount prescribed by the physician. This is especially important if the patient is also taking diuretics and/or digitals preparations.
To check with the physician at once if tarry stools or other evidence of gastrointestinal bleeding is noticed.

Laboratory Tests: When blood is drawn for analysis of plasma potassium it is important to recognize that artifactual elevations can occur after improper venipuncture technique or as a result of in vitro hemolysis of the sample.

Drug Interactions: Potassium-sparing diuretics, angiotensin-converting enzyme inhibitors (see WARNINGS).

Carcinogenesis, Mutagenesis, Impairment of Fertility: Carcinogenicity, mutagenicity, and fertility studies in animals have not been performed. Potassium is a normal dietary constituent.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is unlikely that potassium supplementation that does not lead to hypokalemia would have an adverse effect on the fetus or would affect reproductive capacity.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

 Pediatric Use: Safety and effectiveness in pediatric patients have not been established.

ADVERSE REACTIONS One of the most severe adverse effects is hyperkalemia (see CONTRAINDICATIONS, WARNINGS, and OVERDOSAGE). There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see CONTRAINDICATIONS and WARNINGS).

The most common adverse reactions to oral potassium salts are nausea, vomiting, flatulence, abdominal pain/discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by diluting the preparation further, taking the dose with meals or reducing the amount taken at one time.

OVERDOSAGE The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously potentially fatal hyperkalemia can result (see CONTRAINDICATIONS and WARNINGS). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration (6.5-8.0 mEq/L) and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle paralysis and cardiovascular collapse from cardiac arrest (9-12 mEq/L).

Treatment measures for hyperkalemia include the following:
1. Elimination of foods and medications containing potassium and of any agents with potassium-sparing properties.
2. Intravenous administration of 300 to 500 mL/hr of 10% dextrose solution containing 10-20 units of crystalline insulin per 1,000 mL.
3. Correction of acidosis, if present, with intravenous sodium bicarbonate.
4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitals, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

DOSEAGE AND ADMINISTRATION The usual dietary intake of potassium by the average adult is 50 to 100 mEq per day. Potassium depletion sufficient to cause hypokalemia usually requires the loss of 200 or more mEq of potassium from the total body store.

Dosage must be adjusted to the individual needs of each patient. The dose for the prevention of hypokalemia is typically in the range of 20 mEq per day. Doses of 40-100 mEq per day or more are used for the treatment of potassium depletion. Dosage should be divided if more than 20 mEq per day is given such that no more than 20 mEq is given in a single dose.

Each K-DUR 20 tablet provides 20 mEq of potassium chloride. Each K-DUR 10 tablet provides 10 mEq of potassium chloride.

K-DUR tablets should be taken with meals and with a glass of water or other liquid. This product should not be taken on an empty stomach because of its potential for gastric irritation (see WARNINGS).

Patients having difficulty swallowing whole tablets may try one of the following alternate methods of administration:
a. Break the tablet in half, and take each half separately with a glass of water.
b. Prepare an aqueous (water) suspension as follows:
   1. Place the whole tablet(s) in approximately 1⁄2 glass of water (4 fluid ounces).
   2. Allow approximately 2 minutes for the tablet(s) to disintegrate.
   3. Stir for about half a minute after the tablet(s) has disintegrated.
   4. Swirl the suspension and consume the entire contents of the glass immediately by drinking or by the use of a straw.
   5. Add another 1 fluid ounce of water, swirl, and consume immediately.
   6. Then, add an additional 1 fluid ounce of water, swirl, and consume immediately.

Aqueous suspension of K-DUR tablets that is not taken immediately should be discarded. The use of other liquids for suspending K-DUR tablets is not recommended.

HOW SUPPLIED K-DUR 20 mEq Extended Release Tablets are available in bottles of 100 (NDC 0085-0787-01); bottles of 500 (NDC 0085-0787-06); bottles of 1000 (NDC 0085-0787-10); and boxes of 100 for unit dose dispensing (NDC 0085-0787-31). K-DUR 20 mEq tablets are white to off-white mottled capsule-shaped tablets, imprinted “K-DUR 20” and scored on the other side for flexibility of dosing.

K-DUR 10 mEq Extended Release Tablets are available in bottles of 100 (NDC 0085-0263-01) and boxes of 100 for unit dose dispensing (NDC 0085-0263-81). K-DUR 10 mEq tablets are white to off-white mottled capsule-shaped tablets, imprinted “K-DUR 10” on one side and plain on the other.

Storage Conditions: Keep tightly closed.

Store at 25°C (77°F); excursions permitted to 15-30°C (59-86°F) [see USP Controlled Room Temperature]
Rx only.