

**ALKORINA® SYRUP**  
**(Disodium Hydrogen Citrate Syrup)**

*A systemic Alkiser*

Each 5 ml contains:

Disodium Hydrogen Citrate BP ..... 1.1 gm

Flavoured syrupy base..... q.s.

Colour: Carmoisine, Tartrazine

**Indication and Usage:**

For maintaining physiological alkalinity of urine in pyelitis, cystitis, urethritis & as adjuvant to sulphonamide therapy to prevent crystalluria.

Also indicated in management of Acidosis following diarrhoea, Uremic acidosis, Renal tubular acidosis, Burning micturition.

**Dosage and administration:**

Adults- 15-30ml twice or thrice daily by oral administration. Can be taken with or without dilution by adult followed by liquid if preferred.

Infants: Under 6 months-1/4 teaspoonful (1-2 ml).

6 months to 1 year-1/2 teaspoonful. (2-3 ml)

Children 1-12 years: 1 teaspoonful (5ml)

To be taken diluted with water or milk. Three times a day. To be taken for 2-3 days or as directed by physician.

**Dosage forms and strengths:**

5 mL (1.1 gm of Disodium Hydrogen citrate) Alkorina Syrup for oral administration.

**Contraindication:**

Contraindicated for patients on sodium restricted diets, Hypertension, Oedema, Severe Renal impairment, hypokalaemia, hyperosmolar states and metabolic alkalosis in patients with impaired renal function.

**Warning and Precautions:**

Alkorina syrup can produce a Hypoventilatory states hypocalcemia, alkalosis and renal disease. Consult a physician before taking Alkorina Syrup if your medical history, especially of: a certain breathing problem (pulmonary edema), low calcium levels, high blood pressure, heart problems (e.g., irregular heartbeat, heart failure), kidney disease, swollen ankles/legs/feet due to retaining water (peripheral edema).

**Adverse Reaction:**

Mild Diuresis, Stomach Cramps and Flatulence. Overdosage or too rapid administration can cause metabolic alkalosis (especially in renal impairment)

**Drug Interaction:**

May increase T ½ of basic drugs like quinidine, amphetamines, ephedrine & pseudoephedrine. Reduces nephrotoxicity caused by methotrexate. Enhances elimination of salicylates & barbiturates. Additive effect with na retention caused by corticosteroids. Potentiates renal excretion of tetracyclines. Hypochloraemia alkalosis may occur if used in conjunction with potassium- depleting diuretics.

**Clinical Pharmacology:**

Disodium hydrogen citrate, is a sodium acid salt of citric acid (sodium citrate). It is used as an antioxidant in food as well as to improve the effects of other antioxidants. It is also used as an acidity regulator and sequestrant.

After oral administration of Alkorina (Disodium Hydrogen Citrate Syrup), the metabolism of absorbed citrate produces an alkaline load. The induced alkaline load in turn increases urinary pH and raises urinary citrate by augmenting citrate clearance without measurably altering ultrafilterable serum citrate. Thus, Disodium Hydrogen Citrate therapy appears to increase urinary citrate principally by modifying the renal handling of citrate, rather than by increasing the filtered load of citrate. The increased filtered load of citrate may play some role, however, as in small comparisons of oral citrate and oral bicarbonate, citrate had a greater effect on urinary citrate.

The changes induced by Disodium Hydrogen Citrate produce urine that is less conducive to the crystallization of stone-forming salts (calcium oxalate, calcium phosphate and uric acid). Increased citrate in the urine, by complexing with calcium, decreases calcium ion activity and thus the saturation of calcium oxalate. Citrate also inhibits the spontaneous nucleation of calcium oxalate and calcium phosphate (brushite).

The increase in urinary pH also decreases calcium ion activity by increasing calcium complexation to dissociated anions. The rise in urinary pH also increases the ionization of uric acid to the more soluble urate ion.

Disodium Hydrogen Citrate therapy does not alter the urinary saturation of calcium phosphate, since the effect of increased citrate complexation of calcium is opposed by the rise in pH-dependent dissociation of phosphate. Calcium phosphate stones are more stable in alkaline urine.

In the setting of normal renal function, the rise in urinary citrate following a single dose begins by the first hour and lasts for 12 hours. With multiple doses the rise in citrate excretion reaches its peak by the third day and averts the normally wide circadian fluctuation in urinary citrate, thus maintaining urinary citrate at a higher, more constant level throughout the day. When the treatment is withdrawn, urinary citrate begins to decline toward the pretreatment level on the first day.

The rise in citrate excretion is directly dependent on the Disodium Hydrogen Citrate dosage. Following long-term treatment, Disodium Hydrogen Citrate at a dosage of 60 mEq/day raises urinary citrate by approximately 400 mg/day and increases urinary pH by approximately 0.7 units.

In patients with severe renal tubular acidosis or chronic diarrheal syndrome where urinary citrate may be very low (<100 mg/day), Disodium Hydrogen Citrate may be relatively ineffective in raising urinary citrate. A higher dose of Disodium Hydrogen Citrate may therefore be required to produce a satisfactory citraturic response. In patients with renal tubular acidosis in whom urinary pH may be high, Disodium Hydrogen Citrate produces a relatively small rise in urinary pH.

#### **How supplied / storage:**

Alkorina Syrup is available in Orange coloured clear liquid having orange juicy flavour and supplied in 100 mL Amber colored PET bottle with aluminium cap.

Keep tightly closed.

Protect from light and excessive heat.