adot Biochemical Industries

# Marketing Information

## *GADOMAG K*

**Israeli Patent Pending – Application No. 191876**
**Global Patent Pending – Application CPT/IL/2009/000548**

# /hat is Gadomag K?

**ıdomag K** is a new patent pending **magnesium-potassium citrate compound** ([Mg] content about 10% and [K] ntent about 10%)

s specifically designed for the fortification of **dairy & dairy alternative Beverages**

- **With** a highly bioavailable form of Mg
- **With** complete dispersion
- **With** an excellent organoleptic profile
- **With** the synergistic effect of the combination of Magnesium and Potassium: a proven action of treatment & prevention of renal stones formation.
- **Without** the addition of any stabilizers to achieve a stable Magnesium suspension
- **Without** sedimentation of the Magnesium
- **Without** coagulation of proteins

**ıdomag K** is a perfect Magnesium source for products such as:
- milk based beverages
- soy milk and other soy based products
- other dairy alternatives

**ıdomag K** can be added to reach any practical level of RDA of Magnesium.

SA Opinion of the Scientific Panel on Food Additives, Flavorings, Processing Aids and Materials in Contact with Food On a request from
Commission related to **Magnesium Potassium Citrate as a source of magnesium and supplements and foods intended for the neral population** {Question n° EFSA-Q-2006-131} please find in the following link:
p://www.efsa.europa.eu/EFSA/efsa_locale-1178620753812_1178620766112.htm

e EFSA Journal (2006) 392, 1-6

## *Why Magnesium ?*

agnesium plays an essential role in a range of biochemical and physiological processes.

e human body contains about 25 grams of Magnesium from which 50-60% is in the skeleton and 25-30% in muscle.

ne third of skeletal magnesium is exchangeable and it is this fraction that may serve as a reservoir for maintaining a rmal extracellular magnesium concentration.

- It is required for both anaerobic and aerobic energy generation.
- ATP and ADP complexes of magnesium participates as the substrate for the phosphate transfer reaction.
- Magnesium is essential for protein synthesis in replicating cells.
- Principal mineral of bones.
- Is required as cofactor for over 300 enzyme systems.
- Magnesium deficiency has been linked to :
    - Several cardiovascular diseases including high blood pressure.
    - Abnormalities in neuromuscular and gastrointestinal symptoms.
    - Migraine
    - Coronary heart vessel spasms
    - Fatigue and sleep disorder.
    - Malabsorption syndromes.
    - Genetic disorders
    - Endocrine disorders

## *Why Potassium ?*

otassium, the major intracellular cation in the body, is required for normal cellular function.

evere potassium deficiency is characterized by hypokalemia.

oderate potassium deficiency, which typically occurs without hypokalemia, is characterized by increased blood essure, increased salt sensitivity, an increased risk of kidney stones, and increased bone turnover (as indicated by eater urinary calcium excretion and biochemical evidence of reduced bone formation and increased bone resorption). inadequate intake of dietary potassium may also increase the risk of cardiovascular disease, particularly stroke.

the basis of available data, an Adequate Intake (AI) for potassium is set at 4.7 g (120 mmol)/day for all adults. This level of etary intake (i.e., from foods) should maintain lower blood pressure levels, reduce the adverse effects of sodium chloride intake blood pressure, reduce the risk of recurrent kidney stones, and possibly decrease bone loss.

## **ticle: Effect of Short-Term Supplementation of Potassium Chloride and Potassium Citrate on ood Pressure in Hypertensive's**

*g J He; Nirmala D. Markandu; Rosemary Coltart; Jeffrey Barron; and Graham A. MacGregor**

*m the Blood Pressure Unit (F.J.H.,N.D.M., G.A.M), St. Geroge;s Hospital Medical School, London; and Chemical Pathology (J.B.),St. Helier Hospital, Surrey, United gdom.*

esults, in conjunction with the evidence from many previous trials that potassium chloride has a significant blood pressure-vering effect, suggest that ***potassium citrate has a similar effect on blood pressure as potassium chloride***. These pport other evidence for an increase in potassium intake and indicate that ***potassium does not need to be given in the form chloride to lower blood pressure***.

# *lagnesium/Potassium combination*

## proven action of treatment & prevention of renal stones formation.

veral studies shows that potassium-magnesium citrate is effective in treatment, prevention and associated with a reduced risk kidney stones.

### eduction of Renal Stone Risk by Potassium-Magnesium Citrate During 5 Weeks of Bed Rest

*eph E. Zerwekh, a, , Clarita V. Odvinaa, Lisa-Ann Wuermser†, a and Charles Y.C. Paka*
*Center for Mineral Metabolism and Clinical Research, and the Department of Physical Medicine and Rehabilitation, University of Texas Southwestern Medical Center at las, Dallas, Texas*

nclusions: **Provision of alkali as potassium-magnesium citrate is an effective countermeasure for the increased risk of renal one disease associated with immobilization**

### otassium-Magnesium Citrate Is An Effective Prophylaxis Against Recurrent Calcium Oxalate ephrolithiasis

*ce Ettinger, Charles Y.C. Pak, John T. Citron, Carl Thomas, Beverley Adams-Huet and Arline Vangessel*

rpose: We examined the efficacy of potassium-magnesium citrate in preventing recurrent calcium oxalate kidney calculi.

nclusions : **Potassium-magnesium citrate effectively prevents recurrent calcium oxalate stones, and this treatment given for up 3 years reduces risk of recurrence by 85%.**

## ıysicochemical Action Of Potassium-Magnesium Citrate In Nephrolithiasis.

*: CY, Koenig K, Khan R, Haynes S, Padalino P. Pak CY.*
*ıter for Mineral Metabolism and Clinical Research, University of Texas Southwestern Medical Center, Dallas.*

ect of potassium-magnesium citrate on urinary biochemistry and crystallization of stone-forming salts was compared with that of :assium citrate at same dose of potassium in five normal subjects and five patients with calcium nephrolithiasis

**ınsequently, urinary saturation (activity product) of calcium oxalate declined significantly (from 1.49 x 10(-8) to 1.03 x 10(-8) M2) ring potassium-magnesium citrate therapy and marginally (to 1.14 x 10(-8) M2) during potassium citrate therapy.**

*ID: 1585829 [PubMed - indexed for MEDLINE]*

## otassium-Magnesium Citrate Effective In Correcting Thiazide-Induced Side Effects

*Clin. Pharmacol., Nov 1998; 38: 1035 - 1041. (SAN ANTONIO, TX -- Nov. 13, 1998 in The Journal Of Clinical Pharmacology)*

ıew study published in this month's issue of *The Journal of Clinical Pharmacology* shows that potassium-magnesium citrate is effective d well tolerated in correcting thiazide-induced hypokalemia (low serum potassium) and magnesium loss and in delivering alkalinising effect d citraturic action……. **Another use of potassium-magnesium citrate is in the prevention of kidney stones**….. The drug was shown ɔe effective in inhibiting the recurrence of calcium-containing kidney stones in earlier studies.

# lagnesium & Potassium intake

| Age | Magnesium RDA mg/day | Potassium RDA mg/day |
|---|---|---|
| ss than 6 months | 30 | 400 |
| 2 months | 75 | 700 |
| years | 65 | 3000 |
| years | 110 | 3800 |
| 3 years | 200 | 4500 |
| -18 years | 300 | 4700 |
| -24 | 265 | 4700 |
| n 25-50 years | 300-350 | 4700 |
| omen 25-50 years | 270-280 | 4700 |
| ove 50 years | 350 | 4700 |
| omen Pregnancy or breast feeding | 330-350 | 4700 |

## *low to choose the most suitable Magnesium source for fortification f milk / soy milk / other dairy alternatives?*

operties to be considered:

- Bioavailability
- Magnesium content
- Dispersability
- Organoleptic characteristics
- Effect on kidney stone formation
- Low tendency of coagulation of proteins.

# *Gadomag K*

| | |
|---|---|
| Organic Magnesium source | - Citrate |
| Magnesium Content | - about 10% |
| Potassium Content | - about 10% |
| Dispersability | - Instant |
| Taste | - Neutral, Bland |