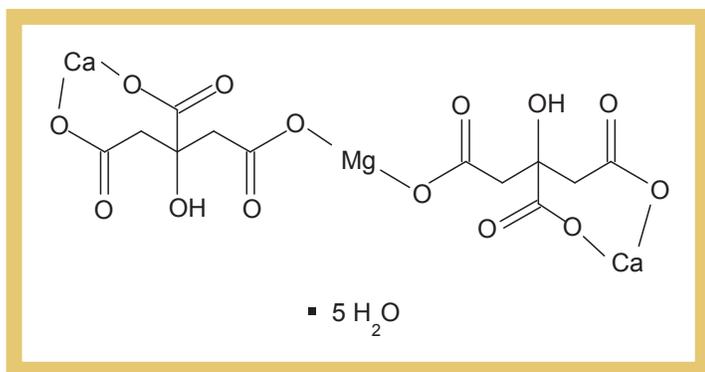


## *Introducing*

### **CALCIUM MAGNESIUM CITRATE CO-SALT**

**Jost Chemical** has developed a proprietary process to produce a unique calcium magnesium citrate co-salt. This co-salt contains calcium and magnesium in a 2:1 Ca:Mg molar ratio. Isolation and characterization by EDTA titration, FTIR, ICP/MS and XRD have indicated the co-salt has a chemical formula of  $\text{Ca}_2\text{Mg}(\text{C}_6\text{H}_5\text{O}_7)_2 \cdot 5\text{H}_2\text{O}$  possessing a molecular weight of 572.7 g/mol.



Homogeneity and segregation studies have demonstrated that the co-salt is a unique compound and not a simple dry blend of calcium citrate and magnesium citrate. The FDA has approved this new product as an NDI (New Dietary Ingredient) for Jost Chemical Co.

Jost offers two product codes: Code 2200, Purified Powder and Code 2206, Purified Granular.

**Code 2200, Purified Powder** will prove beneficial to customers that desire aqueous suspensions of Ca and Mg with excellent mouth feel and unmatched suspension stability. It has been reported that dry blends of calcium citrate and magnesium citrate micronized powders combined and slurried in water (20 – 30% w/w) display extensive thickening, solidification and/or hardening. The two citrate salts react in the aqueous phase and precipitate a unique compound whose suspension is extremely thixotropic. This resulting mixture does not remain fluid and completely solidifies over time, providing difficult if not impossible dosing from the finished goods container. The solidification process is generally slow; however, experimental data demonstrates rapid acceleration of this reaction when heat (sterilization) is applied to the system. Jost's calcium magnesium citrate co-salt stays in suspension and therefore alleviates solidification, hardening and flowability issues, even over an extended period of time.



**Code 2206, Purified Granular** will be most beneficial to customers that desire a directly compressible magnesium source for tablet manufacturing. Typically magnesium salts are very difficult to tablet. It is with great enthusiasm that we report the compressibility of calcium magnesium citrate co-salt exceeds that of Jost Chemical's industry leading calcium citrate. Also noteworthy is the superior compression of code 2206 compared to a dry blend of calcium citrate and magnesium citrate.

The graph illustrates how the compressibility of calcium magnesium citrate co-salt is superior to both calcium citrate and magnesium citrate.

Nutritionally, calcium magnesium citrate co-salt closely matches the RDI (Recommended Dietary Intake) of calcium and magnesium in a single dose. The RDI for Ca is 1000mg/day while that of Mg is 400mg/day. Because of their respective

molecular weights, this ratio of calcium to magnesium is very close to the correct RDI ratio. For example, if one takes 7143mg of this product, 1000mg of Ca and 303mg of Mg would be provided.

This new calcium magnesium citrate co-salt, like many other products

manufactured by Jost, has low levels of vagrant metals including a lead limit of 0.2 ppm maximum. Please contact Jost Chemical for more information regarding this new co-salt and other mineral salts we manufacture.

