

Beverage Fortification

**Minerals, Premixes
and Fortification
Concepts**

**for the use in Water, Juices,
Soft Drinks and Functional
Beverages**



Dr. Paul Lohmann®

High value mineral salts

Mineral fortification of water, juices, soft drinks and functional beverages

The fortification of beverages plays a key role in providing vitamins and minerals to a general, health-conscious public. Dr. Paul Lohmann® provides a wide range of minerals in food and pharma grades for beverage fortification purposes and assists customers in developing new and optimizing current products.

Calcium

For Calcium fortification purposes, Dr. Paul Lohmann® can provide various Calcium compounds depending on the application: In applications where soluble components are necessary, **Calcium Lactate PLUS** or **Calcium Gluconate** provide highest solubility. **Calcium Lactate PLUS** provides significantly more Calcium than regular Calcium Lactate and shows a constantly high solubility at pH values above 7, as well as in carbonated waters. A wide range of further applicable Calcium salts and premix solutions are also available.

Magnesium

For the beverage fortification with Magnesium, Dr. Paul Lohmann® offers water-soluble Magnesium salts like different **Magnesium Citrates**, **Magnesium Gluconate**, as well as **Magnesium Lactate** or **Magnesium Aspartates**. Particularly **Trimagnesium Dicitrate** provides a neutral taste which does not interact with the original flavor of a product. It shows a good solubility in water-based beverages and is therefore suitable for clear, near-water beverages like flavored water or RTD Tea Beverages.

Iron

The fortification with Iron poses special challenges because of the detectable taste of many Iron compounds. A careful tuning of fortificant and product offers optimized results. **Ferrous Gluconate** for example dissolves well in water-based products and harmonizes with flavors like wild berries, cherry or plum. Further products designed for liquid applications are **Ferric Ammonium Citrate**, **Ferrous Lactate**, **Ferrous Sulfate** or our soluble **Ferric Pyrophosphate**.



Zinc

Like Iron, fortification with Zinc is not an easy job. A pleasant product taste and water solubility are the key parameters that have to be considered during the finished product design. **Zinc Gluconate** provides both: It dissolves well in water-based beverages combined with a pleasant taste.

Potassium

Potassium salts are frequently used in isotonic concepts and sports drinks. In this field, **Potassium Citrate** play an important role in maintaining the bodies' acid-base balance.

Trace Elements

We offer solutions for fortification concepts with **Selenium**, **Copper**, **Manganese** and others.

Premixes

Furthermore, Dr. Paul Lohmann® also provides miscellaneous ready-to-use mineral blends for beverage fortification:

Mineral Blend “Near Water Beverage”

Our Near Water Premix contains soluble salts of Magnesium, Calcium, Sodium and Potassium in a physiological ratio. It is designed for beverages that are “near to water”, such as **flavored** water, RTD Tea Beverages or various soft drinks.

Mineral Blend “Calcium Fortification of Orange Juice”

Particularly designed for the Calcium fortification of Orange juice, this premix has a high mineral content based on Calcium Lactate PLUS as a highly soluble Calcium source, and Calcium Phosphate as an additional source of Phosphorous.

Mineral Blend “Isotonic”

Containing Calcium, Magnesium, Sodium and Potassium this premix offers all its components physiologically compatible for a quick regeneration of the electrolytic balance.

Mineral Blend “Sport Drink”

This versatile premix contains Calcium and Magnesium plus vitamins C, B6 and E for a quick and effective regeneration during or after physical activity.

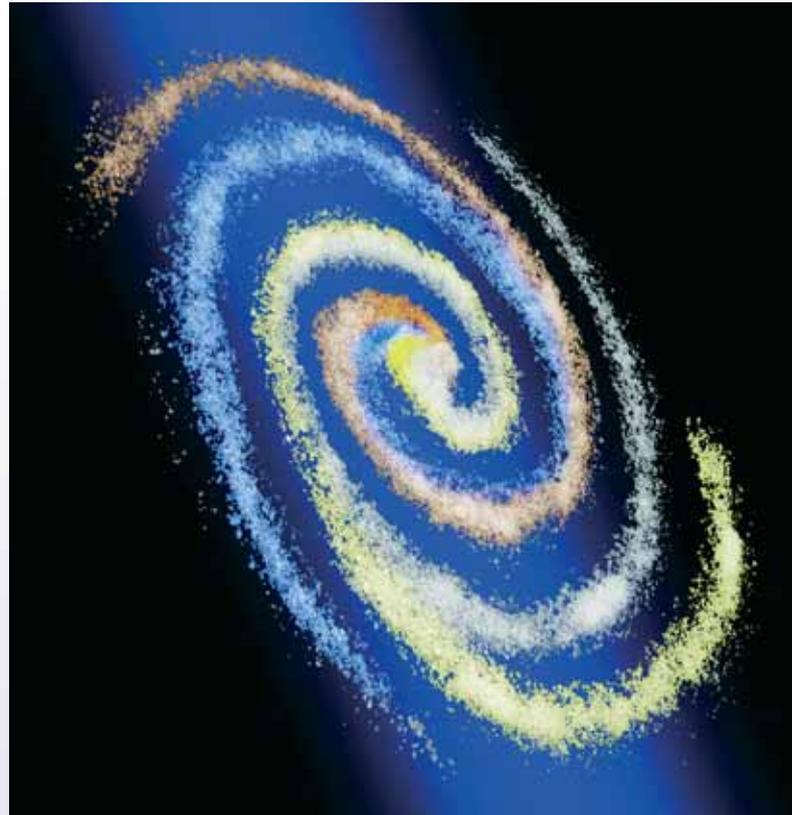
Customized premix solutions for your applications

Of course we are able to design your particular mineral premix. In close cooperation with you, we develop the best composition of mineral salts for your product.

The information given in the document corresponds to our current knowledge. We warrant in the frame of our General Terms and Conditions of Sale that our products are manufactured in accordance with the specifications. However, we disclaim any liability with regard to the suitability of our products for a particular purpose or application or their compatibility with other substances. Tests have to be performed by the customer who also bears the risk in this respect. Nothing herein shall be construed as a recommendation to use our products in conflict with third parties' rights.

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www.lohmann4minerals.com



Particle size variations

Dr. Paul Lohmann® offers its mineral salts in a broad variety of particle sizes. We can manufacture dust-free granulates (> 500 µm), powders (approx. 200 – 300 µm) and micronized powders (approx. 2 µm). Different bulk densities of several mineral salts are also a major part in our portfolio.

Co-operative developments to meet your particular requirements

With the opening of our new laboratory facilities in June 2008, we quintupled our lab capacity. We are now able to manage versatile research and development tasks according to customer inquiries. You are invited to work in our application technology labs on site in Emmerthal together with our R&D team. Our highly skilled R&D scientists are experts in their field, and our companies' experience comprises more than a century.



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