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LomaChelateX[®] – Setting the benchmark for modern supplementation

In the race for the next generation of dietary supplements, mineral bisglycinates, like magnesium bisglycinate, have established themselves as the flagship of a new generation of minerals. Once a niche, bisglycinates are now a benchmark for modern supplementation – backed by proven performance, trusted by consumers worldwide and setting the trend for the future of mineral solutions.

Bisglycinates explained

Bisglycinates attribute their effectiveness to a simple but powerful principle: chelation. Here, a mineral ion is bound to an organic molecule, called a ligand, which effectively surrounds and “grabs” a free metal ion with multiple coordination bonds. This structure creates a stable compound that is the basis for the excellent tolerability and high bioavailability of mineral bisglycinates.

Glycine – The protective shield

Mineral bisglycinates belong to the broader family of amino acid chelates. In bisglycinates, the mineral ion is surrounded by two molecules of glycine, the simplest amino acid. Here, glycine acts as a protective shield, forming a ring-like structure that prevents the mineral ion from unwanted interactions and also allows the mineral to pass gently through the stomach and reach the intestine, where the

ion is released for absorption. The result is optimized bioavailability with reduced gastrointestinal side effects.

Magnesium – The all-rounder

Magnesium is a critical mineral that contributes to hundreds of biochemical reactions in the human body. It plays a role in many physiological functions and is involved in energy metabolism, muscle contraction, the nervous and immune systems, and bone health. By supporting electrolyte balance, magnesium also influences fluid regulation and performance, an aspect that is gaining increasing attention in sports and active lifestyles. However, many people do not consume enough magnesium through their diet alone. Reasons include changing eating habits, stress, certain medications, or increased needs during specific life stages. High-quality supplement forms, such as magnesium bisglycinate, provide an effective

way to reliably support the body's magnesium needs.

LomaChelateX® Magnesium Bisglycinate – Gentle and effective

In magnesium bisglycinate, each magnesium ion is bound to two molecules of glycine. The chelate structure protects the metal ion from unwanted reactions with other compounds such as interactions with anti-nutrients like phytate. The unique bisglycinate structure promotes effective absorption of the mineral. A key advantage of magnesium bisglycinate is its excellent gastrointestinal tolerance. While some magnesium salts are associated with laxative effects or digestive discomfort, bisglycinate is generally well tolerated even at higher intakes. Magnesium bisglycinate is also valued for its positive effects on the nervous system and sleep quality. Along with glycine, it supports relaxation and contributes to healthy, restorative sleep – benefits that strongly resonate with today's health-conscious consumers.

LomaChelateX® – Proof of chelation

The benefits of magnesium bisglycinate only apply to fully reacted material. Only in its authentic form it does deliver its well-documented advantages of high bioavailability and good tolerance. In contrast, simple blends – such as mixtures of magnesium oxide with glycine or similar combinations – do not provide the same benefits and risk mislead or disappoint consumers. Label

declarations suggesting magnesium bisglycinate content in such products are therefore inaccurate and non-compliant.

All LomaChelateX® Mineral Bisglycinates are proven chelates. State-of-the-art analytical methods, including nuclear magnetic resonance (NMR) and fourier-transform infrared spectroscopy (FTIR), were used for their characterization. These techniques clearly differentiate bonded from free glycine. The NMR spectrum as shown in figure 1 for LomaChelateX® Magnesium Bisglycinate confirms the absence of unbound glycine and verifies complete chelation.

New Type – Fine granular

LomaChelateX® Magnesium Bisglycinate is available in a fine-granular form and stands out for consistent quality, good flow properties, and easy handling. It is ideal for capsule formulation and various other formats such as instant drink powders, gel pouches and nutrient blends.

To demonstrate the performance of LomaChelateX® Magnesium Bisglycinate in gel pouches a prototype formulation was developed, which is outlined in figure 2.

Ingredients for Magnesium gel pouch	%
LomaChelateX® Magnesium Bisglycinate	7.14
Water	58.43
Glucose	15.0
Fructose	15.0
Citric acid	3.8
Xanthan gum	0.5
Aroma	0.03
Potassium sorbate	0.1

Fig. 2: Gel pouch with LomaChelateX® Magnesium Bisglycinate

Iron – The power element

Iron deficiency is one of the most common nutritional deficiencies worldwide. Due to its essential role in numerous physiological functions – particularly in hemoglobin, which carries oxygen throughout the body – an adequate iron intake is of the utmost importance. Supplementation is an effective way to address iron deficiency. However, conventional iron salts frequently show gastrointestinal side effects and are often less efficient being absorbed.

LomaChelateX® Iron Bisglycinate – Effective and well tolerated

A key feature of LomaChelateX® Iron Bisglycinate is that it is both well-absorbed and well-tolerated. This makes it especially suitable for sensitive groups such as pregnant women, children, and older adults, as well as for athletes with higher iron demands. As a fully reacted chelate, it ensures efficacy while safeguarding the iron ion from absorption-inhibiting compounds such as phytates.

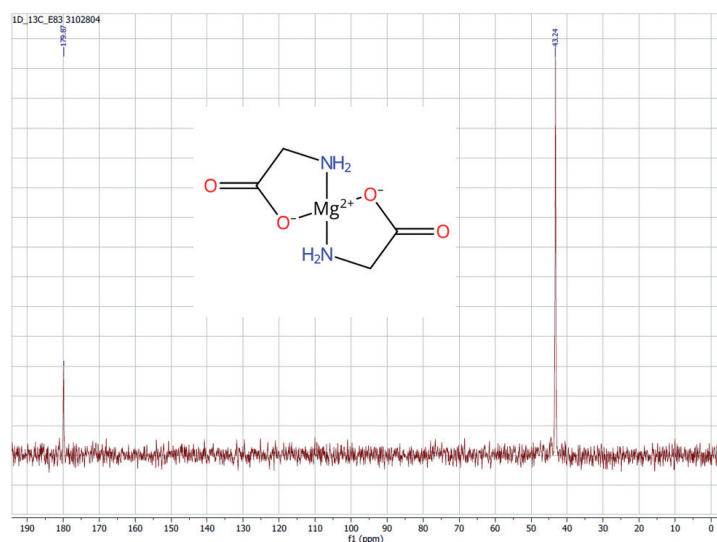


Fig. 1: NMR of LomaChelateX® Magnesium Bisglycinate



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One step ahead in terms of regulation: Dr. Paul Lohmann® is the first manufacturer worldwide to provide full documentation for iron bisglycinate as an active pharmaceutical ingredient (API). This makes LomaChelateX® Iron Bisglycinate suitable not only for dietary supplements but also for pharmaceutical applications requiring strict regulatory compliance.

LomaChelateX® Iron Bisglycinate can be used in a range of application formats, including powdered beverages. To illustrate this potential, figure 3 shows a prototype hydration powder formulation for athletes, providing 15% NRV each of magnesium, iron, and calcium, as well as 6% NRV of potassium.

Ingredients for electrolyte powder with Iron	%
LomaChelateX® Ferrous Bisglycinate	0.3
Mg salt	15.7
K salt	7.0
Ca salt	16.3
Na salt	44.1
Acidifier	11.5
Aroma	4.8
Sweetener	0.3

Fig. 3: Hydration powder with LomaChelateX® Iron Bisglycinate

Comprehensive portfolio of fully reacted LomaChelateX® Bisglycinates

Alongside magnesium and iron, the LomaChelateX® portfolio includes zinc, manganese, calcium, and copper bisglycinate. These minerals are central to immune function, bone health, enzyme activity, and cellular metabolism. Our broad range of LomaChelateX® Mineral Bisglycinates makes it easy to develop formulations with minerals in a single, consistent form.

All LomaChelateX® Bisglycinates are fully reacted, ensuring authenticity and effectiveness. They are applied in several delivery formats such as capsules, tablets, powders, instant beverages, and functional nutrition concepts, giving developers flexibility to design targeted solutions ranging from immune support to sports nutrition.

Experience and partnership

With more than 135 years of expertise in mineral production and modern manufacturing technology, Dr. Paul Lohmann® delivers consistent product quality while remaining flexible to customer needs. Manufacturing facilities operate under the highest quality standards with clearly defined processes.

From idea to market launch, our R&D team supports customers with practical expertise and tailored solutions that shorten development time, enable clear product differentiation, and bring consumer-focused innovations to market. Dr. Paul Lohmann® stands for reliability, technical competence, and customer focus – values trusted by our partners worldwide.

For more information, please contact

Dr. Paul Lohmann GmbH & Co. KGaA
 Hauptstr. 2, 31860 Emmerthal, Germany
 Tel +49 5155 63-0
sales@lohmann-minerals.com
www.lohmann-minerals.com