

VITALMAG

MAGNESIUM OXIDE TO SUPPORT THE PRODUCTION OF FOOD



GRECIAN MAGNESITE

Vital for life

Magnesium is recognized as an essential nutrient for all species. In humans, magnesium performs an extremely important role with numerous health benefits. Nowadays, various biochemical and functional problems in humans i.e. heart arrhythmias, high blood pressure, diabetes and osteoporosis, muscles spasm, etc. are attributed to magnesium deficiency. Consequently, it is imperative to supply the human body with the necessary Mg during the daily nourishment.

Diminished human intake of magnesium is an after effect of deficiency in the feeding cycle caused by low levels of magnesium in soils and plants which, results in insufficient intake by the animals.

Additionally, the low magnesium intake to animals has the following fundamental implications:

- **Hypomagnesaemia or grass tetany:** appears during the grazing period and more often in spring and autumn, with apparent symptoms of staggering, muscle trembling, rapid breathing, loss of appetite and several disorders, which may even cause mortality if immediate action is not taken.
- **Skeletal deformity and retarded growth:** of young animals is very possible if the milk obtained during lactation is magnesium deficient.
- **Minimization of milk production - Buffers:** MgO as a weak base helps to neutralize excess acids within the digestive system of animals by stabilizing the pH value in the ideal range of 6,2 - 6,8, yielding increased milk production in the dairy cows.

In order to prevent magnesium deficiency, especially in lactating and grazing cattle and sheep it is essential to include some additional amounts of magnesium in their daily feeding. There are various ways that magnesium can be absorbed by the animal:

- Compound feeds - Premixes (mixing magnesium with other minerals and trace elements)
- Spreading of powdered MgO over the fields, during grazing periods
- Licking blocks
- Addition of MgO into the drinking water

Magnesium Oxide

Natural magnesium carbonate, calcined at a temperature of approximately 900 °C, known as caustic calcined magnesia and/or Magnesium Oxide (MgO), is the principal magnesium source used in the feed industry, to provide supplementary magnesium intake to ruminant animals, predominantly, due to its highest bioavailability, Mg content and other inherent properties.

Relative biological value of different magnesium sources

	Mg content (%)	Available Mg g (Mg) per kg (product)
VITALMAG 85	51	450
VITALMAG 80	49	435
Magnesium Oxide FGP (Feed Grade Powder)	51	428
Magnesium Hydroxide (Powder)	36	356
Magnesium Oxide FGG (Feed Grade Granules)	51	311
Mg phosphate	26	221
Magnesium Chloride	12	106
Magnesium Sulphate, 7H ₂ O	10	96
Mg, Ca phosphate	9	82
Mg, Ca, Na phosphate	5	49,5

Source: EMFEMA

Biologically available

Scientific studies of mineral metabolism generally recognize that the total MgO content has little significance unless it is qualified by a factor indicating the actual available MgO retained by the animal (so called bioavailability).



VITALMAG

Mother earth's choice

Description and advantages

VITALMAG is a white, self-flowing, magnesium oxide processed from pure natural magnesite, specially selected for this application.

VITALMAG is carefully controlled during the beneficiation, calcination and sizing steps, under ISO and GMP⁺ standards to ensure a consistent product, with high and uniform biological availability and exceptionally low levels of contaminants.

VITALMAG is available at various size distributions to fulfill the requirements of the feed production techniques, in order to fully satisfy the animal feed industry.

European Commission maximum limits of heavy metals and dioxins in feed materials (Directive 2002/32/EC, 2012/277/EC, 2012/744/EC, 2013/1275/EC and 2015/186/EC, 767/2009/EC (feed regulation) and 183/2005/EC (feed hygiene)).

	Max EU Limit	VITALMAG
Arsenic	20 ppm	2,00 ppm
Lead	10 ppm	2,00 ppm
Fluorine	600 ppm	200 ppm
Mercury	0,1 ppm	0,05 ppm
Cadmium	2,00 ppm	0,05 ppm
Dioxins (sum of PCDDs + PCDFs)	0,75 ng/kg	<0,2 ng/kg
Sum of Dioxins and dioxin like PCBs (sum of PCDDs + PCDFs + PCBs)	1,00 ng/kg	<0,4 ng/kg
(maximum content in relative to a feedingstuff with a moisture content of 12%)		

Why VITALMAG?

- Proven Biological Availability
- Remarkably low levels of contaminants
- Available in all optimum size distributions
- Adjusted reactivity
- Excellent flowability
- Dust free (for non ground product)
- Easy to handle
- No exothermic overreaction and viscosity suspension problems during the preparation of animal feed
- Consistent quality
- Whiteness

Why GRECIAN MAGNESITE?

- Established reputation for over 50 years
- Leading producer of Caustic Calcined Magnesia for the European animal feed industry
- Quality assurance of all products and procedures (ISO 9001 and GMP⁺ certified)
- Consistency and reliability
- After sales service
- Research and development for continuous optimisation of our products
- Biggest exporter of caustic calcined magnesia in the European Union

Physical and chemical properties

Physical form: Self-flowing, white, odorless - microcrystalline in form

Sizing: Available, either as run of kiln (0 - 14mm)

Or sized as follows:

- 0,2 – 1,0 mm

- 0,2 – 2,0 mm

- 0,2 – 1,6 mm

- Ground

VITALMAG 85, Mg content (min): 50% - MgO content (min): 84,5%

VITALMAG 80, Mg content (min): 48,8% - MgO content (min): 81,0%

Packaging and storage

VITALMAG is available in bulk or packed in big bags; with or without bottom spout, or in nominal 25 and 50kgs multi-ply paper sacks with one polyethylene coated ply. Indefinite shelf life if stored in a dry place.



Food chain safety and quality issues

Quality assurance and food chain safety have been traditionally considered issues of utmost importance for GRECIAN MAGNESITE. The company guarantees that the product is designed in such a way to support the production of food that meets established safety and quality standards.

The confirmation of the company's commitment is the ISO 9001 and GMP⁺ Certificates.



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