

# ZEOLITE CLINOPTILOLITE

APPLICATION AS



## FEED ADDITIVE CATTLE

### WIDE SPECTRUM FEED ADDITIVE

**Toxin Binder:** Toxins have several negative effects on ruminants including aflatoxin residue in the milk, low milk efficiency, growth suppression, damages in the liver and kidneys, fertility problems, nervous system failure, and even death. Adding 50 – 100 gr of Zeolite to the feed prevents the negative effects of the toxins. Clinoptilolite minimizes the negative effects of the aflatoxins on the feed efficiency ratio, performance and feed consumption. Adding Zeolite at a ratio of 0,5% in weight to the feed adsorbs aflatoxins at a 97% rate. It eases digestion and provides an effective feed consumption.

**Ammonia Adsorbent:** Zeolite holds the ammonia that is extracted in the rumen through its ion exchange specialty and slowly releases it to the medium in a controlled manner. This way it ensures the continuous and controlled multiplication of the microorganisms in the rumen as well as the bacterial protein. It arranges the buffering of the pH in the digestion system and the gastrointestinal secretions. From the moment it enters the digestion system, it remains active in the body and continues the ion exchange until it is extracted from the body. It does not interact with other feed content.

**Heavy Metal Remover:** Thanks to this superior cation exchange capacity, Zeolite can adsorb heavy metals like Ni, Pb, Hg and Cd.

**Anti-caking & Flowability Agent:** Through its ability to adsorb moisture and grease, Zeolite prevents the oxidation and molding that might occur during storage as a result of moisture. It acts as a great pellet binder and anti-caking agent in preparation of the feed. It decreases the breakages that occur during the storage and transportation of the pellets. It prevents the liquid oils, that are added in order to increase the ration energy, from being released and becoming oxidized during storage.

### WHAT DISTINGUISHES ZEOLITE FROM OTHER MYCOTOXIN BINDERS?

While other mycotoxin binders act like a sponge that adsorbs everything including vitamins, amino acids and nutrients together with mycotoxins, Zeolite is a selective polar binder that has a binding affinity and selectivity only for positively-charged ions (cations) such as toxins, ammonia and heavy metals. It has no binding affinity for antibiotics, coccidiostats, vitamins, minerals, amino acids, other nutrients or feed additives.

Acidic clays absorb the mycotoxins in the basic pH environment (large intestine). However, since most part of the digestion occurs in the small intestine, the mycotoxins are transferred to the blood stream along with the nutrients before they reach the large intestine. The “Clinoptilolites”, which are from the basic clay group, on the other hand, absorb such mycotoxins in the acidic pH environment of the small intestine, where most part of the digestion occurs.

### HIGH ECONOMIC RETURNS WITH A LOW COST

Zeolite yields high economic benefits with only a little expenditure. It decreases mortality rates.

It can be safely substituted for sodium bentonite or other rumen buffering agents.

It increases the endurance, quality and shelf life of the feed.

### SAFE AND EFFECTIVE UREA CONTAINING FEED

Zeolite decreases urea toxicity and increases the intake and taste of the urea.

It provides more effective utilization of the nitrogen given with the urea.



SUSTAINABLE AND COST EFFECTIVE  
**TOXIN BINDER**

ENVIRONMENT FRIENDLY PRODUCT  
**SAFE & 100% NATURAL**

# ZEOLITE CLINOPTILOLITE

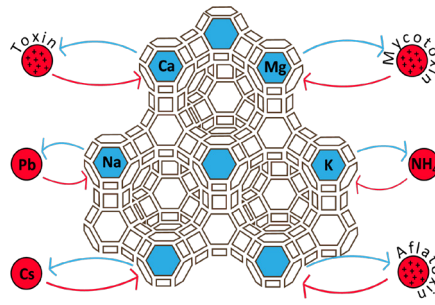


## CONTENT

Zeolite is a crystalline, hydrated aluminosilicate that has an infinite three dimensional structure. Rota Mining's Zeolite contains extremely pure Clinoptilolite (92% by mass on average), which is one of the most effective Heulandite type of zeolite. Its highly porous structure (with a porosity reaching 50%) provides an extremely large surface area on which chemical reactions and cation exchanges can take place at a very high degree. It can absorb incredible amounts of water/liquid into its pores. Clinoptilolite has a natural negative ion charge which furnishes it with a tremendously high cation exchange capacity (CEC). Thanks to CEC, it adsorbs and binds ammonium, toxins, mycotoxins and heavy metals like Ni, Pb, Hg and Cd, very efficiently and effectively.

## CATION EXCHANGE CAPACITY

Cation exchange capacity (CEC) is a measure of the amount of cations (positively-charged ions) that a clay can catch. As mycotoxins, toxins, heavy metals and ammonium are all positively charged, they are all easily trapped by cation exchangers. Clinoptilolite from Rota Mining's Gordes / Manisa reservoir possesses by far one of the highest CEC rates (as high as  $170 \text{ cmol} \cdot \text{kg}^{-1}$ ) among all reservoirs in the world. Purity and CEC are the two vital parameters that define the quality of zeolite mineral.



## THE PRODUCER, ROTA MINING

Rota Mining is the leading natural Zeolite - Clinoptilolite mineral producer and exporter in Eurasia. It was founded in 1995. Since 2003, it is only specialized in the production and the marketing of its own natural Zeolite mineral; and is committed to setting the standards for the natural zeolite industry in the world. It carries out its production under Fami-Qs quality control system since 2007. Thanks to the high purity of its ore and to the quality of its service, Rota Mining serves its products to more than 50 countries in the world.

**rota mining**  
corporation  
**YOUR RELIABLE PRODUCER**

**MINIMUM**  
**80% PURITY**  
**GUARANTEE**

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## FEED ADDITIVE

### APPLICATION FOR CATTLE

Add to the feed mixer together with other feed ingredients. Mix thoroughly and homogeneously. Compatible with all types of feed ingredients.

Unless your nutritionist does not advise a different rate:

Mix 2 – 4 kg to 1 ton of feed

Cattle: 50 – 100 gr / day

Small Cattle: 10 – 40 gr / day

### SUITABLE SIZES

0 - 400 micron

0 - 300 micron

0 - 200 micron

0 - 100 micron

0 - 50 micron

### THE PRODUCT

100% natural & safe product. Certified by Ecocert for use in organic farming. Produced in accordance with the EU's Feed Additive and Premixes directive and under the strict quality control system and surveillance of Fami-Qs. Zeolite is not a medicine or nutrient. It can't be used for therapeutic purposes.

Information herein is accurate to the best of our knowledge, but may be subject to change without notice. Suggestions are made without warranty or guarantee of results. Before using, user should determine the suitability of the product for its intended use and user assumes the risk and liability in connection herewith.



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**QS**