

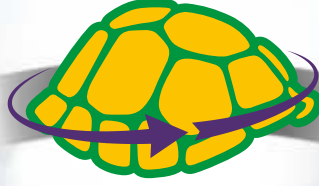


min-a-zel®

MYCOTOXIN
CONTROL

منازل

مائیکوٹاکسینز پر مکمل کنٹرول



360° SECURITY
TOTAL MYCOTOXINS PROTECTION



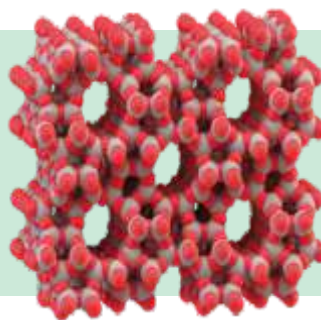
 **PATENT CO.®**

EXPERTS IN PREVENTION

MINAZEL® is patented name for eco-friendly, clinoptilolite based product that has positive impacts on animal health and productivity.

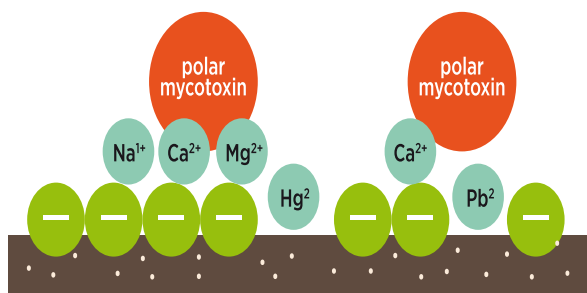


This Clinoptilolite is hydrated mineral of a volcanic or sedimentary origin. It belongs to Tectosilicates, or "framework silicates within family of zeolites.



Due to Three-dimensional Network of SiO₄ and AlO₄, Clinoptilolite looks like honey comb.

MINAZEL mode of action



natural clinoptilolite surface

(negative surface is caused by substitution of Si⁴⁺ with Al³⁺ or Fe³⁺)

mineral surface

- Due to the presence of alumina, clinoptilolite exhibit a negatively charged framework counter - balanced by positive cations, resulting in a strong electrostatic field on the internal surface.
- The phenomenon of displacing cations by other substances is known as cation exchange capacity (CEC)
- The size of its pores allows for selective ion exchange

(Boranic 2000, Melenova et al. 2003, Mashacek et al. 2010)

Why MINAZEL® should be used every day in animal nutrition?

1

mycotoxins

- MINAZEL® improves health and productivity of farm animal by effective adsorbing of mycotoxins

Mycotoxin adsorption by MINAZEL:

		% ADSORPTION		% DESORPTION	
		AB1	FB1	AB1	FB1
MINAZEL (201707266003257)	pH 3	99.4	72.2	pH 6.5	0.2
					4.5

2

ammonia

- MINAZEL® Controls level of ammonia in animal metabolism as well as in the environment

Ammonia adsorption by MINAZEL

SAMPLE	CEC, mmol NH ₄ ⁺ /100 g zeolite	Ammonia adsorption mg NH ₄ ⁺ /kg
MINAZEL	193.4	27089.0

3

heavy metals

- MINAZEL® detoxicates animal organism due to high sorption affinity towards heavy metals (Pb, Cd, Ni, Hg), radionuclides, (Cs¹³⁴, Cs¹³⁷), endotoxins, viruses, biogene amines, etc.

MINAZEL does not adsorb

1. amino acids and fat soluble vitamins (Tomasevic-Canovic et al. 1996.)

2. copper, zinc, manganese and cobalt (Dumic et al. 1996.)

3. micronutrients (Tomasevic-Canovic et al. 2001.)

MINAZEL short datasheet

description



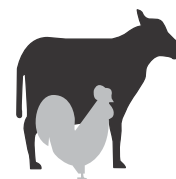
Product based on clinoptilolite E568

dosage



Cattle, Buffalo: 25-50g/head/day
Sheep, Goat: 5-10g/head/day
Poultry: 1-1.5kg/ton of feed

application



for all animal species