# ZeoFeed®

Clinoptilolite of sedimentary origin (1g568)

**DEFINITION:**

An additive for the production of feed mixtures.
Category: "Technological additives",
Function group: g) „Binders",
i) „Anti-caking agents"

**COMPOSITION:**

A thermally activated and processed raw material (natural zeolite) primarily comprising sedimentary clinoptilolite - a crystalline hydrated aluminium silicate of alkali metals and alkali soil metals.

**CAS NUMBER:** 12173-10-3

**MANUFACTURER REGISTRATION NUMBER:** SK 100139

**DECLARED QUALITATIVE PARAMETER:**

| Qualitative parameter | Legislative | Validity | Limit value | Real value ∅ (min., max.) |
|---|---|---|---|---|
| Content of active materials * | | | | |
| Clinoptilolite content (%) | Commission Regulation (EC) No 651/2013 | Clinoptilolite of sedimentary origin | ≧ Min. 80.0 | 86.0 - 94.0 |
| Dioxin content* | | | | |
| Amount of dioxins such as PCDD/F (ng WHO- TEQ/kg) | Directive 2006/13/EC as amended | Clinoptilolite of sedimentary origin | Max. 0.75 | 0.094 (0.094-0.096) |
| Amount of dioxins such as PCBs (ng WHO-TEQ/kg) | * | | * | 0.032 (0.031-0.033) |
| Amount of PCDD/F and PCBs (ng WHO-PCDD/F-PCB-TEQ/kg) | Directive 2006/13/EC as amended | Feed additive from functional group binders, anti-caking agents, and coagulants | Max. 1.5 | 0.126 (0.125-0.129) |
| Heavy metal content | | | | |
| Pb content (mg/kg) | Directive 2005/87/EC as amended | Feed additive from functional group binders, anticaking agents, and coagulants | Max. 30 | 12.32 (11.37-13.42) |
| Cd content (mg/kg) | Directive 2005/87/EC as amended | Feed additive from functional group binders, anticaking agents, and coagulants | Max. 2.0 | 0.0211 (0.0140-0.0259) |
| As content (mg/kg) | Directive 2003/100/EC as amended | Complete feed | Max. 2.0 | 1.24 (0.90-1.45) |
| Hg content (mg/kg)* | Directive 2005/8/EC as amended | Complete feed | Max. 0.1 | 0.00791 - 0.00560 |
| Mycological evaluation * | | | | |
| All kinds of blight | Slovak Government regulation Nr. 438/2006 | Feed mixture for pig fattening and beef cattle | Max. 150 000 blight spores in 1 g of feed | Negative |

AGRO

ZEOCEM®
ZEOCEM, a. s., 094 34 Bystré 282, Slovak Republic
tel.: +421 57 4492643 • fax: +421 57 4452679
e-mail: zeocem@zeocem.sk • www.zeocem.com

# ZeoFeed®

Clinoptilolite of sedimentary origin (1g568)

| Qualitative parameters | | Legislative | Validity | Limit value | Real value ∅ (min.,max.) |
|---|---|---|---|---|---|
| Microbiological evaluation * | Salmonella | Slovak Government Regulation Nr. 438/2006 | All kinds of feed | 0 | Negat. |
| | E.coli | Slovak Governmenr regulation Nr. 438/2006 | Feed mixtures | | <MDA <1.0. $10^1$ |
| Radioactive contamination ($Cs^{134}$ and $Cs^{137}$) (Bq/kg) | | Slovak Government regulation Nr. 438/2006 | Feed for pigs, lambs, and other kinds of animals | 1,250-5,000 | 1.3±0.50 |
| Animal proteins * | | | | | Negat. |
| Chemical analysis | | | | | |
| $SiO_2$ content (%) | | PNR 08/13 | | Min. 62.0 | 63.24(62.25-68.28) |
| $Al_2O_3$ content (%) | | PNR 08/13 | | Max. 14.0 | 12.31(12.22-12.62) |
| $Fe_2O_3$ content (%) | | PNR 08/13 | | Max. 2.30 | 1.45(1.31-1.66) |
| CaO content (%) | | PNR 08/13 | | Max. 5.50 | 2.85(2.67-2.98) |

* External analysis

| Property | | ZeoFeed 50 | | ZeoFeed 200 | | ZeoFeed 0-0.2 mm | | ZeoFeed 0-1 mm | |
|---|---|---|---|---|---|---|---|---|---|
| | | PNR 08/13 | ∅ (min., max.) | PNR 08/13 | ∅ (min., max.) | PNR 08/13 | ∅ (min., max.) | PNR 08/13 | ∅ (min., max.) |
| Granularity (oversize) (%) | 0.05 mm | Max. 25.0 | 15.9 (3.7-23.8) | | | | | | |
| | 0.09 mm | | | Max. 25.0 | 12.4 (6.1-22.1) | | | | |
| | 0.1 mm | Max. 5.0 | 3.2 (2.0-4.8) | | | | | | |
| | 0.2 mm | | | Max. 10.0 | 1.2 (0.5-2.6) | Max. 20.0 | 6.9 (0.3-14.4) | Min. 50.0 | 67.2 (50.8-77.3) |
| | 0.5 mm | | | | | | | | |
| | 1.0 mm | | | | | | | Max. 20.0 | 6.4 (2.7-18.9) |
| | 2.5 mm | | | | | | | | |
| Ion-exchange capacity (mol/kg) | | Min. 0.70 | 0.83 (0.73-0.96) | Min. 0.70 | 0.83 (0.73-0.96) | Min. 0.60 | 0.83 (0.74-0.97) | Min. 0.70 | 0.83 (0.72-0.97) |
| Wetness (%) | | Max. 6.0 | 3.49 (3.0-5.4) | Max. 6.0 | 3.74 (3.2-5.48) | Max. 10.0 | 4.39 (3.14-5.28) | Max. 8.0 | 4.39 (3.14-5.28) |

| Property | | ZeoFeed 0.2-0.5 mm | | ZeoFeed 0.5-1 mm | | ZeoFeed 1-2.5 mm | | ZeoFeed 0.2-1 mm | |
|---|---|---|---|---|---|---|---|---|---|
| | | PNR 08/13 | ∅ (min., max.) | PNR 08/13 | ∅ (min., max.) | PNR 08/13 | ∅ (min., max.) | PNR 08/13 | ∅ (min., max.) |
| Granularity (oversize) (%) | 0.05 mm | | | | | | | | |
| | 0.09 mm | | | | | | | | |
| | 0.1 mm | | | | | | | | |
| | 0.2 mm | Min. 70.0 | 89.6 (70.4-97.3) | | | | | Min. 80.0 | 93.4 (81.2-98.9) |
| | 0.5 mm | Max. 25.0 | 8.6 (2.1-18.0) | Min. 80.0 | 89.7 (82.5-98.8) | | | - | |
| | 1.0 mm | | | Max. 30.0 | 12.3 (1.4-29.2) | Min. 80.0 | 93.0 (88.3-99.8) | Max. 5.0 | 6.5 (0.6-10) |
| | 1.25 mm | | | | | | | Max. 0.0 | 0 |
| | 2.5 mm | | | | | Max. 25.0 | 3.1 (0.2 - 12.4) | - | |
| Ion-exchange capacity (mol/kg) | | Min. 0.70 | 0.83 (0.74-0.97) | Min. 0,70 | 0.83 (0.74-0.97) | Min. 0,70 | 0.83 (0.74-0.97) | Min. 0.70 | 0.83 (0.74-0.97) |
| Wetness (%) | | Max. 8.0 | 4.39 (3.14-5.20) | Max. 8.0 | 4.39 (3.14-5.20) | Max. 8.0 | 4.39 (3.14-5.20) | Max. 8.0 | 4.39 (3.14-5.20) |

AGRO

ZEOCEM®

ZEOCEM, a. s., 094 34 Bystré 282, Slovak Republic
tel.: +421 57 4492643 • fax: +421 57 4452679
e-mail: zeocem@zeocem.sk • www.zeocem.com

# ZeoFeed®

Clinoptilolite of sedimentary origin (1g568)

**APPLICATION:**
ZeoFeed is recommended for all feeds for all animal species.

**DOSAGE:**
Mix ZeoFeed homogeneously into the feed.
Maximum permissible content 10,000 mg/kg of the complete feed.

**STORAGE:**
The product must be stored in original, undamaged and closed containers in dry, hygienically clean, well-aired indoor storages, away from foodstuffs, beverages, and medicines. Unused ZeoFeed (remains without other additives) can be worked into the soil, since clinoptilolite is a certified soil adjuvant. Clinoptilolite is not a water contaminant - it can also be disposed of in the sewage system. Clinoptilolite does not result in hazardous waste! Any used ZeoFeed packaging or containers, once empty, are to be disposed of as separated waste.

**LIFETIME:**
If storage conditions are observed, granular ZeoFeed remains usable for up to 2 years.

**DELIVERY:**
25 kg paper bags (40 pcs / pallet)
BigBag packaging (1,000 kg / 1,200 kg / pallet)
bulk material, silo

**CONTACT:**
Agro-line Project manager
MVDr. Jaroslav Tall
tall@zeocem.sk
tel.: +421 577862 033
fax: +421 574 452 679
mob.: +421 905 903 380

**MANUFACTURER:**
ZEOCEM, a.s., 094 34 Bystré 282, Slovak Republic
Holder of certificate ISO 9001 and FAMI -QS
tel.: 00421/57/4492643, fax: 00421/57/4452679
e-mail: zeocem@zeocem.sk, www.zeocem.com

AGRO

# NOTES



ZEOCEM, a. s., 094 34 Bystré 282, Slovak Republic
tel.: +421 57 4492643 • fax: +421 57 4452679
e-mail: zeocem@zeocem.sk • www.zeocem.com