



Laboratory is not accredited for performing of tests indicated as N, SN, TN

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Customer

Customer: ZEOCEM, a.s.
(name and address) č. 282, 09434 Bystré
Sent by: ZEOCEM Bystré
Contract/order: 534/ÚRK/2017
Order: 17-05195
Sampling by: Customer

Date of sample delivery: 30.06.2017
Date of analysis from: 30.06.2017
to: 18.07.2017
Date of Test Report issue: 18.07.2017
Sample number: 1

Test Results

N ^o :	Sample number	17-013475	Type of sample	Solid materials – industrial products			Chemical analysis
Name of the Sample		Clinoptilolite of sedimentary origin - batch M 220617-1					
Measured quantity / parameter / analyte	Measurement unit	Test result	Uncertainty of measurement	Test method	Limit of Quantification	Methodical prescription	Type of test
Si (as SiO ₂)	% dry matter	69.98	2 %	AES-ICP	0.05	IP 1.39b	A
Al (as Al ₂ O ₃)	% dry matter	11.95	4 %	AES-ICP	0.01	IP 1.2b	A
Ti (as TiO ₂)	% dry matter	0.126	15 %	AES-ICP	0.002	IP 1.42b	A
Total Fe (as Fe ₂ O ₃)	% dry matter	1.29	5 %	AES-ICP	0.01	IP 1.18b	A
Ca (as CaO)	% dry matter	2.71	7 %	AES-ICP	0.01	IP 1.9b	A
Mg (as MgO)	% dry matter	0.71	10 %	AES-ICP	0.01	IP 1.26b	A
Mn (as MnO)	% dry matter	0.012	10 %	AES-ICP	0.002	IP 1.27b	A
P (as P ₂ O ₅)	% dry matter	<0.05	-	AES-ICP	0.05	IP 1.31b	A
Na (as Na ₂ O)	% dry matter	0.379	15 %	AES-ICP	0.01	IP 1.29b	A
K (as K ₂ O)	% dry matter	3.50	5 %	AES-ICP	0.01	IP 1.24b	A
Cr (as Cr ₂ O ₃)	mg/kg dry matter	<5	-	AES-ICP	5	IP 1.14b	A
Ag	mg/kg dry matter	<0.05	-	AAS-ETA	0.05	IP 1.1a	A
As	mg/kg dry matter	1.40	12 %	AAS-HG	0.10	IP 1.3a	A
Au	mg/kg dry matter	<0.005	-	AAS-ETA	0.005	IP 1.4a	A
Ba	mg/kg dry matter	631.6	8 %	AES-ICP	0.5	IP 1.6b	A
Be	mg/kg dry matter	1.4	16 %	AES-ICP	0.2	IP 1.7b	A
Bi	mg/kg dry matter	0.31	15 %	AAS-HG	0.10	IP 1.8a	A
Cd	mg/kg dry matter	0.013	-	AAS-ETA	0.01	IP 1.10a	A
Co	mg/kg dry matter	<0.5	-	AAS-ETA	0.5	IP 1.13a	A
Cs	mg/kg dry matter	8	15 %	AAS-F	1	IP 1.16a	A
Cu	mg/kg dry matter	4.6	8 %	AAS-F	2	IP 1.17a	A
Ga	mg/kg dry matter	14	15 %	AES-ICP	1	IP 1.19b	A
Hg	mg/kg dry matter	0.005	13 %	AAS-AMA	0.002	IP 1.22a	A
Mo	mg/kg dry matter	1.2	-	AES-ICP	0.2	IP 1.28b	A
Ni	mg/kg dry matter	1.8	19 %	AAS-ETA	0.5	IP 1.30a	A
Pb	mg/kg dry matter	10.5	12 %	AAS-F	3	IP 1.32a	A
Sb	mg/kg dry matter	<0.2	-	AAS-HG	0.2	IP 1.36a	A
Sc	mg/kg dry matter	3.5	15 %	AES-ICP	0.5	IP 1.21b	A
Sn	mg/kg dry matter	<1	-	AES-ICP	1	IP 1.40b	A
Sr	mg/kg dry matter	225	10 %	AES-ICP	5	IP 1.37b	A
V	mg/kg dry matter	6	15 %	AES-ICP	5	IP 1.45b	A
W	mg/kg dry matter	<1	-	AES-ICP	1	IP 1.48b	A
Zn	mg/kg dry matter	21	7 %	AAS-F	2	IP 1.49a	A
Zr	mg/kg dry matter	95	10 %	AES-ICP	1	IP 1.21b	A
S (as SO ₃)	% dry matter	<0.03	-	AES-ICP	0.03	IP 1.35b	A
Loss by ignition at 950°C	% dry matter	8.22	10 %	GA	0.02	IP 3.5	A
Moisture	%	2.44	10 %	GA	0.02	IP 5.7	A



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Test equipment and instruments used for testing have been calibrated and verified according to valid metrological regulations.

Abbreviations

Abbreviation	Method
AAS-AMA	Atomic absorption spectrometry - Advanced mercury analyzer
AAS-ETA	Atomic absorption spectrometry with electrothermic atomization
AAS-F	Atomic absorption spectrometry with flame atomization
AAS-HG	Atomic absorption spectrometry with hydride generation
AES-ICP	Inductive coupled plasma - atomic emission spectrometry
GA	Gravimetric analysis

Test type:

A - accredited, **N** – non accredited, **SA** – subcontract accredited, **SN** - subcontract non accredited

Uncertainty of Measurement

Uncertainty of Measurement is presented as extended combined uncertainty from test result.

Statements

Testing Laboratory declares that the Test Results relate only to the tested items.

This Test Report shall not be reproduced except in full, without written approval of the Testing Laboratory.

The laboratory accreditation or its Test Report itself shall mean in no case approval of the product by the body granting the accreditation or by any other body.

Claiming

It is possible to claim the test results up to 30 days from the date of the results sending to customer. Claims delivered in written form only are accepted and executed.

Storage of samples remains

- a) Only samples with original properties which do not change in dependence on time are kept in.
- b) Samples after finishing of microbiological testing are liquidated.

Test Report will be delivered to: ZEOCEM, a.s.

Test Report provided by:

Mgr. Monika Dobošová
Deputy manager of LPMS

Authorized by:

Ing. Juraj Hanuščin
Manager of LPMS

