



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

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### Customer

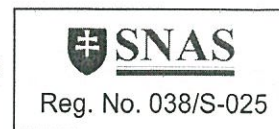
Customer: ZEOCEM, a.s.  
(name and address) č. 282, 09434 Bystré  
Sent by: ZEOCEM Bystré  
Contract/order: 17/15 ÚRK/2015  
Order: 15-00009  
Sampling by: Customer

Date of sample delivery: 07.01.2015  
Date of analysis from: 07.01.2015  
to: 13.02.2015  
Date of Test Report issue: 13.02.2015  
Sample number: 1

### Test Results

N <sup>o</sup> :	Sample number	Type of sample	Chemical analysis				
1	15-000017	Solid materials – geological materials	Clinoptilolite of sedimentary origin -batch M 231214-1				
Measured quantity / parameter / analyte	Measurement unit	Test result	Uncertainty of measurement	Test method	Limit of Quantification	Methodical prescription	Type of test
SiO <sub>2</sub>	% dry matter	67.29	2 %	AES-ICP	0.05	IP 1.39b	A
Al <sub>2</sub> O <sub>3</sub>	% dry matter	12.51	4 %	AES-ICP	0.01	IP 1.2b	A
TiO <sub>2</sub>	% dry matter	0.154	15 %	AES-ICP	0.002	IP 1.42b	A
Total Fe as Fe <sub>2</sub> O <sub>3</sub>	% dry matter	1.42	5 %	AES-ICP	0.01	IP 1.18b	A
CaO	% dry matter	2.94	7 %	AES-ICP	0.01	IP 1.9b	A
MgO	% dry matter	0.62	10 %	AES-ICP	0.01	IP 1.26b	A
MnO	% dry matter	0.026	10 %	AES-ICP	0.002	IP 1.27b	A
P <sub>2</sub> O <sub>5</sub>	% dry matter	<0.05		AES-ICP	0.05	IP 1.31b	A
Na <sub>2</sub> O	% dry matter	0.832	7 %	AES-ICP	0.01	IP 1.29b	A
K <sub>2</sub> O	% dry matter	3.30	5 %	AES-ICP	0.01	IP 1.24b	A
Cr <sub>2</sub> O <sub>3</sub>	mg/kg dry matter	6	10 %	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	1.01	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	695	8 %	AES-ICP	0.5	IP 1.6b	A
Be	mg/kg dry matter	1.0	16 %	AES-ICP	0.2	IP 1.7b	A
Bi	mg/kg dry matter	0.16	15 %	AAS-HG	0.10	IP 1.8a	A
Cd	mg/kg dry matter	0.087	18 %	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	5	15 %	AES	1	IP 1.16a	A
Cu	mg/kg dry matter	8.2	10 %	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	0.007	13 %	AAS-AMA	0.002	IP 1.22a	A
Mo	mg/kg dry matter	1.2	24 %	AES-ICP	0.2	IP 1.28b	A
Ni	mg/kg dry matter	2.79	19 %	AAS-ETA	0.5	IP 1.30a	A
Pb	mg/kg dry matter	9.5	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	4.1	15 %	AES-ICP	0.5	IP 1.21b	A
Sn	mg/kg dry matter	5	25 %	AES-ICP	5	IP 1.40b	A
Sr	mg/kg dry matter	298	10 %	AES-ICP	5	IP 1.37b	A
V	mg/kg dry matter	8	15 %	AES-ICP	5	IP 1.45b	A
W	mg/kg dry matter	<5		AES-ICP	5	IP 1.48b	A
Zn	mg/kg dry matter	22	7 %	AAS-F	2	IP 1.49a	A
Zr	mg/kg dry matter	126	10 %	AES-ICP	1	IP 1.21b	A
Moisture	%	3.80	10 %	GA	0.02	IP 5.7	A

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



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### 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	Atomic emission spectrometry
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

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

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

Test Report provided by:

RNDr. K. Lachová  
Deputy manager of laboratory

Authorized by:

Ing. J. Hanuščin  
Manager of laboratory

