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18-236-4165

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Aug 24, 2018

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7294

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Aug 15, 2018

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ISSUE DATE
Aug 24, 2018

CALCIUM PRODUCTS INC
CALCIUM PRODUCTS INC
2520 N LOOP DR STE 7100
AMES IA 50010-8279

REPORT OF ANALYSIS

For: (7294) CALCIUM PRODUCTS INC
EASTERN CORN BELT

Analysis	Level Found As Received	Units	Reporting Limit	Method	Analyst-Date	Verified-Date
Sample ID: **PELLITIZED LIME** Lab Number: **2838407** Date Sampled: **2018-07-23**						
Sulfur (total)	0.41	%	0.05	MWL ME PROC 26	crs5-2018/08/16	asl4-2018/08/22
pH	7.47	S.U.	0.01	EPA 9045	jsa6-2018/08/17	asl4-2018/08/22
Free moisture	0.46	%	0.01	AOAC 965.08	eas2-2018/08/17	asl4-2018/08/22
Mercury (total)	n.d.	mg/kg	0.05	EPA 7471	ccm2-2018/08/18	bab2-2018/08/24
Zinc (total)	19.4	mg/kg	2.0	EPA 6010	ras7-2018/08/23	bab2-2018/08/24
Selenium (total)	n.d.	mg/kg	5.0	EPA 6010	ras7-2018/08/24	kkh9-2018/08/24
Lead (total)	n.d.	mg/kg	5.0	EPA 6010	ras7-2018/08/23	bab2-2018/08/24
Nickel (total)	4.7	mg/kg	1.0	EPA 6010	ras7-2018/08/23	bab2-2018/08/24
Molybdenum (total)	n.d.	mg/kg	1.0	EPA 6010	ras7-2018/08/23	bab2-2018/08/24
Cobalt (total)	n.d.	mg/kg	1.00	EPA 6010	ras7-2018/08/23	bab2-2018/08/24
Cadmium (total)	n.d.	mg/kg	0.50	EPA 6010	ras7-2018/08/23	bab2-2018/08/24
Arsenic (total)	n.d.	mg/kg	5.0	EPA 6010	ras7-2018/08/23	bab2-2018/08/24
Moisture	1.0	%	0.1	SM 2540 G-(1997)	bjs0-2018/08/24	mjs5-2018/08/24
Calcium (total)	31.8	%	0.01	MWL ME PROC 26	crs5-2018/08/16	asl4-2018/08/22
Magnesium (total)	2.67	%	0.01	MWL ME PROC 26	crs5-2018/08/16	asl4-2018/08/22
Total neutralizing value (CaCO3 eq)	86.3	%	0.1	AOAC 955.01	eas2-2018/08/23	asl4-2018/08/24
ECCE	74.5	%	0.1	Calculation	Auto-2018/08/23	Auto-2018/08/24
% passing 4 sieve	100	%	0.1	ASTM E 276-13 (mod)	dab2-2018/08/23	asl4-2018/08/23
% passing 8 sieve	98.6	%	0.1	ASTM E 276-13 (mod)	dab2-2018/08/23	asl4-2018/08/23

The result(s) issued on this report only reflect the analysis of the sample(s) submitted.

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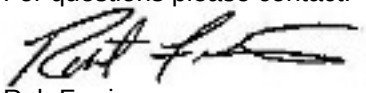
EASTERN CORN BELT

Analysis	Level Found As Received	Units	Reporting Limit	Method	Analyst-Date	Verified-Date
Sample ID: PELLITIZED LIME	Lab Number: **2838407** (con't)					
% passing 20 sieve	94.0	%	0.1	ASTM E 276-13 (mod)	dab2-2018/08/23	asl4-2018/08/23
% passing 30 sieve	90.8	%	0.1	ASTM E 276-13 (mod)	dab2-2018/08/23	asl4-2018/08/23
% passing 60 sieve	78.0	%	0.1	ASTM E 276-13 (mod)	dab2-2018/08/23	asl4-2018/08/23
% passing 80 sieve	71.9	%	0.0	ASTM E 276-13 (mod)	dab2-2018/08/23	asl4-2018/08/23
% passing 100 sieve	69.1	%	0.1	ASTM E 276-13 (mod)	dab2-2018/08/21	asl4-2018/08/23
% passing 200 sieve	58.1	%	0.1	ASTM E 276-13 (mod)	dab2-2018/08/23	asl4-2018/08/23
% retained pan	58.1	%	0.1	ASTM E 276-13 (mod)	dab2-2018/08/23	asl4-2018/08/23

Sample(s) was prepared for EPA 6010 analysis by EPA 3050b.
All results are reported on an AS RECEIVED basis., n.d. = not detected , ppm = parts per million, ppm = mg/kg

cc: Account(s) 29154 EFC EMAILING

For questions please contact:



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EASTERN CORN BELT

Detailed Method Description(s)

ICP Analysis Fertilizers AOAC 985.01 (mod)

Analysis follows MWL ME 026 which is based on AOAC 985.01. Samples have been prepared using MWL WC 056. Total minerals in fertilizers have been prepared by AOAC 957.02 using mineral acids and heat. Water soluble manganese is prepared by AOAC 972.03 and the other water soluble by AOAC 977.01. Sample analysis involves moving the sample extract into the ICP where it is nebulized and introduced into the high temperature plasma which energizes the electrons of the dissolved minerals/metals. As the energized electrons of the minerals/metals return to ground state, energy is released as light. The emitted wavelength(s) and light intensities are used to identify and quantitate the minerals/metals in the sample

SM 2540 G

Analysis follows MWL WC 060 which is based on SM 2540 G. A sample is weighed placed in a vacuum drying oven to drive off the moisture and re-weighed. The sample is then placed in a muffle furnace at 550°C, cooled, and re-weighed. The residue remaining is the ash and the mass lost is the volatile matter.

AOAC 955.01

Analysis follows MWL WC 039 which is based on AOAC 955.01. A sample is treated with an excess of acid and then back-titrated with a known base to a phenolphthalein end point

pH METER

Sample analysis follows MWL WC 061 which uses a pH meter, probe, and sample slurry. The sample is mixed with a pre-determined amount of water to make a slurry. The slurry is allowed to equilibrate and then a pH meter and probe is used to determine the pH

Calculation

Analytical results are entered into applicable formulas to provide a calculated result which is reported.

Free water in fertilizers

Sample analysis follows MWL WC PROC 002 which is based on AOAC 965.08 method II). A sample is placed in a pre-weighed container and placed in a vacuum oven for two hours. The sample is removed and placed in a desiccator to cool and then reweighed. The loss in mass is reported as free moisture.

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Wet Sieve

Sample analysis follows MWL WC 070 which is based on ASTM E 276. A known mass of a solid is obtained and a pre-determined set of sieves obtained. The sample is placed on the upper most (largest screen size) and the sample washed with water to wash the materials through the sieves. The material retained on the individual sieves is removed and weighed and the percent of the total passing through the sieve is calculated and reported.

ME 067

Samples are analyzed for mercury using MWL ME 067 which is based upon EPA 7471, cold vapor atomic absorption (CVAA).

Samples are prepared via MWL ME 037 that uses a series of digestion steps involving hot mineral acids and oxidizers so as to destroy organic matter and solubilize mercury. The mercury is reduced by use of stannous chloride to elemental mercury that is then aerated to the light path of a mercury light of an atomic absorption spectrometer (AAS). The absorption of the mercury light at 253.7 nm is then correlated to the level of mercury present in the original sample.

ME 042

Analysis follows MWL ME 042 which is based on EPA 6010b, Inductively Coupled Plasma (ICP). A light emission technique where prepared samples are injected into a high energy plasma that forces the elements in the injected sample to emit light energies which are proportional to the level of minerals and metals present. The light is then detected and correlated to the levels of minerals and metals in the original sample.

Fertilizer Prep AOAC 957.02

Samples are prepared using a combination of nitric acid and heat. The heating takes place in a block digestor