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Apr 15, 2021

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ISSUE DATE
Apr 15, 2021

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

REPORT OF ANALYSIS

For: (7294) CALCIUM PRODUCTS INC
WATER TREATMENT PLANT LIME FROM ARON AG LIME

Analysis	Level Found As Received	Units	Reporting Limit	Method	Analyst-Date	Verified-Date
Sample ID: **101** Lab Number: **8891851** Date Sampled: **2021-04-03**						
Moisture	43.0	%	0.1	SM 2540 G-(1997)	akn1-2021/04/14	eas2-2021/04/14
Calcium (total)	17.7	%	0.01	MWL ME PROC 26	jdg9-2021/04/14	eas2-2021/04/14
Magnesium (total)	2.08	%	0.01	MWL ME PROC 26	jdg9-2021/04/14	eas2-2021/04/14
Total neutralizing value (CaCO3 eq)	52.5	%	0.1	AOAC 955.01	jed2-2021/04/13	eas2-2021/04/14
ECCE	52.4	%	0.1	Calculation	Auto-2021/04/15	Auto-2021/04/15
% passing 4 sieve	100	%	0.1	ASTM E 276-13 (mod)	may8-2021/04/15	tat9-2021/04/15
% passing 8 sieve	100	%	0.1	ASTM E 276-13 (mod)	may8-2021/04/15	tat9-2021/04/15
% passing 20 sieve	99.9	%	0.1	ASTM E 276-13 (mod)	may8-2021/04/15	tat9-2021/04/15
% passing 30 sieve	99.8	%	0.1	ASTM E 276-13 (mod)	may8-2021/04/15	tat9-2021/04/15
% passing 60 sieve	99.6	%	0.1	ASTM E 276-13 (mod)	may8-2021/04/15	tat9-2021/04/15
% passing 80 sieve	99.2	%	0.0	ASTM E 276-13 (mod)	may8-2021/04/15	tat9-2021/04/15
% passing 100 sieve	98.9	%	0.1	ASTM E 276-13 (mod)	may8-2021/04/15	tat9-2021/04/15
% passing 200 sieve	98.5	%	0.1	ASTM E 276-13 (mod)	may8-2021/04/15	tat9-2021/04/15
% retained pan	98.5	%	0.1	ASTM E 276-13 (mod)	may8-2021/04/15	tat9-2021/04/15
Mercury (total)	n.d.	mg/kg	0.05	EPA 7471	pjd8-2021/04/15	kkh9-2021/04/15
Zinc (total)	2.7	mg/kg	2.0	EPA 6010	ras7-2021/04/12	kkh9-2021/04/15
Selenium (total)	n.d.	mg/kg	5.0	EPA 6010	ras7-2021/04/12	kkh9-2021/04/15
Lead (total)	n.d.	mg/kg	5.0	EPA 6010	ras7-2021/04/12	kkh9-2021/04/15
Nickel (total)	n.d.	mg/kg	1.0	EPA 6010	ras7-2021/04/12	kkh9-2021/04/15

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

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Analysis	Level Found As Received	Units	Reporting Limit	Method	Analyst-Date	Verified-Date
Sample ID: 101 Lab Number: **8891851** (con't)						
Molybdenum (total)	n.d.	mg/kg	1.0	EPA 6010	ras7-2021/04/12	kkh9-2021/04/15
Cobalt (total)	n.d.	mg/kg	1.00	EPA 6010	ras7-2021/04/12	kkh9-2021/04/15
Cadmium (total)	n.d.	mg/kg	0.50	EPA 6010	ras7-2021/04/12	kkh9-2021/04/15
Arsenic (total)	n.d.	mg/kg	5.0	EPA 6010	ras7-2021/04/12	kkh9-2021/04/15
Aluminum (total)	3990	mg/kg	5.0	EPA 6010	ras7-2021/04/12	kkh9-2021/04/15

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

For questions please contact:

Stefanie Rath
Account Manager
srath@midwestlabs.com (402)829-9881

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Detailed Method Description(s)

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.

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

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

Calculation

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

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.

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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

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