

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

**REPORT OF ANALYSIS**

For: (7294) CALCIUM PRODUCTS INC  
FERTILIZER ANALYSIS

Analysis	Level Found		Reporting		Analyst- Date	Verified- Date
	As Received	Units	Limit	Method		
Sample ID: <b>AG LIME</b>	Lab Number: <b>2756526</b>	Date Sampled: <b>2017-12-07</b>				
Moisture	2.3	%	0.1	SM 2540 G-(1997)	bjs0-2017/12/18	asl4-2017/12/20
Calcium (total)	19.9	%	0.01	MWL ME PROC 26	trh1-2017/12/18	asl4-2017/12/20
Magnesium (total)	12.5	%	0.01	MWL ME PROC 26	trh1-2017/12/18	asl4-2017/12/20
Total neutralizing value (CaCO <sub>3</sub> eq)	99.3	%	0.1	AOAC 955.01	eas2-2017/12/15	asl4-2017/12/20
ECCE	52.1	%	0.1	Calculation	Auto-2017/12/20	Auto-2017/12/20
% passing 4 sieve	99.5	%	0.1	ASTM E 276-13 (mod)	cjs4-2017/12/20	asl4-2017/12/20
% passing 8 sieve	74.8	%	0.1	ASTM E 276-13 (mod)	cjs4-2017/12/20	asl4-2017/12/20
% passing 20 sieve	50.1	%	0.1	ASTM E 276-13 (mod)	cjs4-2017/12/20	asl4-2017/12/20
% passing 30 sieve	45.0	%	0.1	ASTM E 276-13 (mod)	cjs4-2017/12/20	asl4-2017/12/20
% passing 60 sieve	33.4	%	0.1	ASTM E 276-13 (mod)	cjs4-2017/12/20	asl4-2017/12/20
% passing 80 sieve	27.4	%	0.0	ASTM E 276-13 (mod)	cjs4-2017/12/20	asl4-2017/12/20
% passing 100 sieve	2.1	%	0.1	ASTM E 276-13 (mod)	cjs4-2017/12/20	asl4-2017/12/20
% passing 200 sieve	16.1	%	0.1	ASTM E 276-13 (mod)	cjs4-2017/12/20	asl4-2017/12/20
% retained pan	16.1	%	0.1	ASTM E 276-13 (mod)	cjs4-2017/12/20	asl4-2017/12/20

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

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REPORT NUMBER

**17-354-4214**

REPORT DATE  
**Dec 20, 2017**

SEND TO  
**7294**

RECEIVED DATE  
**Dec 14, 2017**



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ISSUE DATE  
**Dec 20, 2017**

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Analysis	Level Found	Units	Reporting	Method	Analyst-	Verified-
	As Received		Limit		Date	Date

All results are reported on an AS RECEIVED basis.

cc: Account(s) 29154 EFC EMAILING

For questions please contact:

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Account Manager  
rferris@midwestlabs.com (402)829-9871

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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 which is based on AOAC 957.02 using mineral acids and heat. 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.

#### **Fertilizer Prep AOAC 957.02**

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

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