

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

**REPORT OF ANALYSIS**

For: (7294) CALCIUM PRODUCTS INC  
MISSOURI VALLEY PELLETIZED LIME

| Analysis                            | Level Found                |                                 | Reporting |                     | Analyst-<br>Date | Verified-<br>Date |
|-------------------------------------|----------------------------|---------------------------------|-----------|---------------------|------------------|-------------------|
|                                     | As Received                | Units                           | Limit     | Method              |                  |                   |
| Sample ID: <b>PELL LIME</b>         | Lab Number: <b>2857589</b> | Date Sampled: <b>2017-11-01</b> |           |                     |                  |                   |
| Moisture                            | 0.8                        | %                               | 0.1       | SM 2540 G-(1997)    | bjs0-2018/10/12  | asl4-2018/10/15   |
| Calcium (total)                     | 37.1                       | %                               | 0.01      | MWL ME PROC 26      | trh1-2018/10/12  | asl4-2018/10/15   |
| Magnesium (total)                   | 0.45                       | %                               | 0.01      | MWL ME PROC 26      | trh1-2018/10/12  | asl4-2018/10/15   |
| Total neutralizing value (CaCO3 eq) | 87.5                       | %                               | 0.1       | AOAC 955.01         | eas2-2018/10/11  | asl4-2018/10/15   |
| ECCE                                | 71.0                       | %                               | 0.1       | Calculation         | Auto-2018/10/18  | Auto-2018/10/19   |
| % passing 4 sieve                   | 99.4                       | %                               | 0.1       | ASTM E 276-13 (mod) | jaj4-2018/10/18  | asl4-2018/10/19   |
| % passing 8 sieve                   | 98.2                       | %                               | 0.1       | ASTM E 276-13 (mod) | jaj4-2018/10/18  | asl4-2018/10/19   |
| % passing 20 sieve                  | 94.4                       | %                               | 0.1       | ASTM E 276-13 (mod) | jaj4-2018/10/18  | asl4-2018/10/19   |
| % passing 30 sieve                  | 89.3                       | %                               | 0.1       | ASTM E 276-13 (mod) | jaj4-2018/10/18  | asl4-2018/10/19   |
| % passing 60 sieve                  | 69.6                       | %                               | 0.1       | ASTM E 276-13 (mod) | jaj4-2018/10/18  | asl4-2018/10/19   |
| % passing 80 sieve                  | 62.8                       | %                               | 0.0       | ASTM E 276-13 (mod) | jaj4-2018/10/18  | asl4-2018/10/19   |
| % passing 100 sieve                 | 60.0                       | %                               | 0.1       | ASTM E 276-13 (mod) | jaj4-2018/10/18  | asl4-2018/10/19   |
| % passing 200 sieve                 | 50.4                       | %                               | 0.1       | ASTM E 276-13 (mod) | jaj4-2018/10/18  | asl4-2018/10/19   |
| % retained pan                      | 50.4                       | %                               | 0.1       | ASTM E 276-13 (mod) | jaj4-2018/10/18  | asl4-2018/10/19   |

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

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REPORT NUMBER

**18-292-4017**

REPORT DATE  
**Oct 19, 2018**

SEND TO  
**7294**

RECEIVED DATE  
**Oct 10, 2018**



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www.midwestlabs.com

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ISSUE DATE  
**Oct 19, 2018**

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|----------|----------------------------|-------|--------------------|--------|------------------|-------------------|
|----------|----------------------------|-------|--------------------|--------|------------------|-------------------|

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  
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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.

**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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