

# FreFlo

Weeping Water, NE  
Plant #1

FreFlo is a blend of large to small particle sized granular CaCO<sub>3</sub> product processed from mined high calcium limestone in Weeping Water, NE with minimum calcium content of 38%



## Particle Size Measurement -- Laser Diffraction

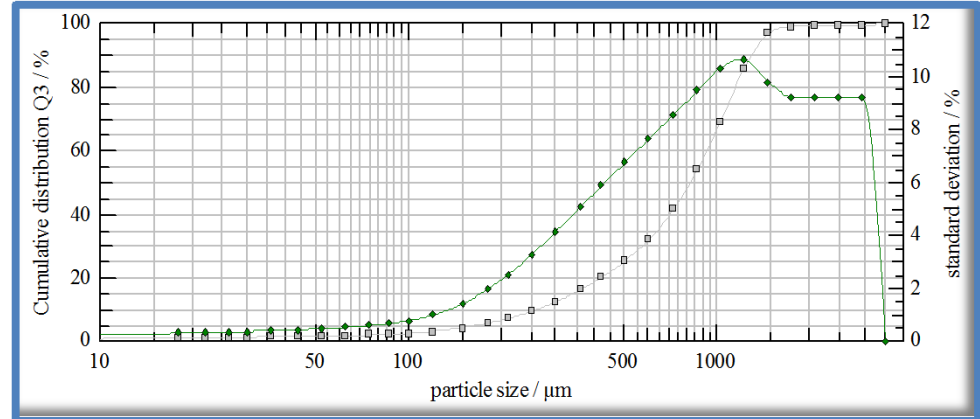
Average Particle Size = **837.00** microns

Ave particle size: half of the particles are above and half are below this point on the "S" shaped cumulative distribution graph.

**% Ca 38.82**  
**%CaCO<sub>3</sub> 97.05**

| Typical Analyses           |        |     |
|----------------------------|--------|-----|
| Magnesium (Mg)             | 0.272  | %   |
| Silicon (Si)               | 0.73   | %   |
| Silica (SiO <sub>2</sub> ) | 1.56   | %   |
| Iron (Fe)                  | 0.142  | %   |
| Sodium (Na)                | 0.025  | %   |
| Potassium (K)              | 0.024  | %   |
| Sulfur (S)                 | 0.878  | %   |
| Manganese (Mn)             | 0.019  | %   |
| Phosphorus (P)             | 0.008  | %   |
| Chloride (Cl)              | 0.002  | %   |
| Chromium (Cr)              | 6      | ppm |
| Aluminum (Al)              | 456    | ppm |
| Boron (B)                  | 14     | ppm |
| Barium (Ba)                | 15     | ppm |
| Lead (Pb)                  | < 5    | ppm |
| Nickel (Ni)                | < 5    | ppm |
| Cobalt (Co)                | < 5    | ppm |
| Copper (Cu)                | 32     | ppm |
| Zinc (Zn)                  | 145    | ppm |
| Cadmium (Cd)               | < 5    | ppm |
| Iodine (I)                 | 3      | ppm |
| Arsenic (As)               | < 5    | ppm |
| Beryllium (Be)             | < 5    | ppm |
| Selenium (Se)              | 0.56   | ppm |
| Mercury (Hg)               | <0.050 | ppm |
| Vanadium (V)               | < 5    | ppm |
| Molybdenum (Mo)            | 14     | ppm |
| Fluorine (F)               | < 1    | ppm |
| Bismuth (Bi)               | < 5    | ppm |
| Antimony (Sb)              | < 5    | ppm |

| % Acid Solubility |               |
|-------------------|---------------|
| Average           | <b>45.32</b>  |
| Maximum           | 49.19         |
| Minimum           | 40.92         |
| H <sub>2</sub> O  | < 0.5%        |
| Bulk Density      | (lbs./cu.ft.) |
| Loose:            | <b>94</b>     |
| Packed:           | <b>106</b>    |



μm = micron (1/1000 of a millimeter)

| Particle Distribution--U.S. Screen Comparison |             |            |           |
|---|-------------|------------|-----------|
| 14 X 80 mesh product                          |             |            |           |
| Micron Size                                   | U.S. Screen | % Retained | % Passing |
| 2000  | <b>10</b>   | 1.0        | 99.0      |
| 1700  | <b>12</b>   | 0.5        | 98.5      |
| 1400  | <b>14</b>   | 4.5        | 94.1      |
| 1180  | <b>16</b>   | 11.7       | 82.4      |
| 1000  | <b>18</b>   | 15.5       | 67.0      |
| 710   | <b>25</b>   | 26.4       | 40.5      |
| 500   | <b>35</b>   | 15.5       | 25.1      |
| 425   | <b>40</b>   | 4.9        | 20.2      |
| 355   | <b>45</b>   | 4.5        | 15.7      |
| 300   | <b>50</b>   | 3.5        | 12.3      |
| 212   | <b>70</b>   | 5.2        | 7.1       |
| 180   | <b>80</b>   | 1.7        | 5.4       |
| 150   | <b>100</b>  | 1.4        | 4.0       |
| 75  | <b>200</b>  | 2.2        | 1.8       |
| 10  | <b>Pan</b>  | 1.7        |           |
|   |             | 100.0      |           |

| cumulative distribution (laser diffraction) |           |         |           |
|---|-----------|---------|-----------|
| Microns                                     | % Passing | Microns | % Passing |
| 3500  | 100       | 210     | 6.95      |
| 2940  | 99.08     | 180     | 5.37      |
| 2460  | 99.08     | 150     | 3.95      |
| 2060  | 99.07     | 120     | 2.81      |
| 1740  | 98.81     | 100     | 2.24      |
| 1460  | 96.81     | 86      | 1.93      |
| 1220  | 85.80     | 74      | 1.72      |
| 1020  | 68.84     | 62      | 1.55      |
| 860   | 53.74     | 52      | 1.41      |
| 720   | 41.31     | 44      | 1.30      |
| 600   | 31.97     | 36      | 1.20      |
| 500   | 25.06     | 30      | 1.10      |
| 420   | 19.85     | 26      | 1.04      |
| 360   | 16.03     | 22      | 0.95      |
| 300   | 12.26     | 18      | 0.84      |
| 250   | 9.23      |         |           |