

# FreFlo

Alden, IA

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



## Particle Size Measurement -- Laser Diffraction

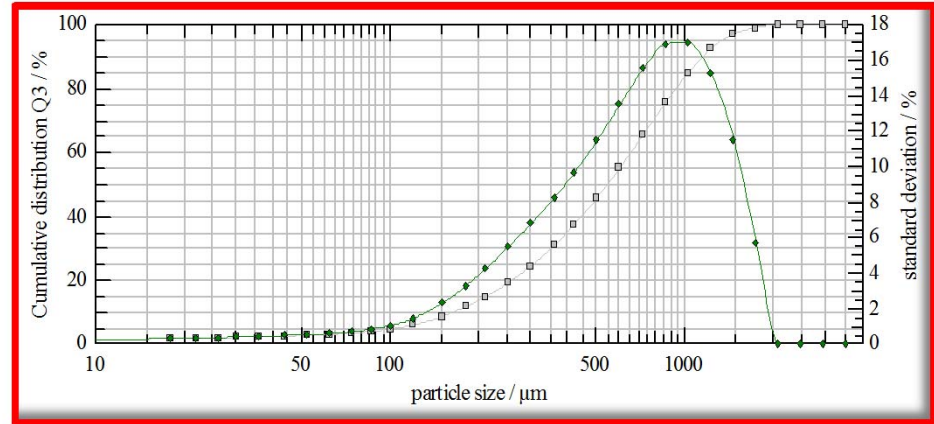
Average Particle Size = **574.51** microns

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

**% Ca**            **39.52**  
**% CaCO<sub>3</sub>**    **98.80**

Typical Analyses		
Magnesium (Mg)	0.118	%
Silicon (Si)	0.07	%
Silica (SiO <sub>2</sub> )	0.14	%
Iron (Fe)	0.145	%
Sodium (Na)	0.021	%
Potassium (K)	0.009	%
Sulfur (S)	0.888	%
Manganese (Mn)	0.015	%
Phosphorus (P)	0.007	%
Chloride (Cl)	0.004	%
Chromium (Cr)	7	ppm
Aluminum (Al)	107	ppm
Boron (B)	10	ppm
Barium (Ba)	< 5	ppm
Lead (Pb)	< 5	ppm
Nickel (Ni)	< 5	ppm
Cobalt (Co)	< 5	ppm
Copper (Cu)	29	ppm
Zinc (Zn)	118	ppm
Cadmium (Cd)	< 5	ppm
Iodine (I)	2	ppm
Arsenic (As)	< 5	ppm
Beryllium (Be)	< 5	ppm
Selenium (Se)	0.252	ppm
Mercury (Hg)	< 0.050	ppm
Vanadium (V)	< 5	ppm
Molybdenum (Mo)	< 5	ppm
Fluorine (F)	< 1	ppm
Bismuth (Bi)	< 5	ppm
Antimony (Sb)	< 5	ppm

% Acid Solubility	
Average	<b>51.67</b>
Maximum	<b>57.37</b>
Minimum	<b>43.91</b>
H <sub>2</sub> O	< 0.5%
Bulk Density	(lbs./cu.ft.)
Loose:	<b>88</b>
Packed:	<b>95</b>



$\mu\text{m}$  = micron (1/1000 of a millimeter)

Particle Distribution--U.S. Screen Comparison			
14 X 200 mesh product			
Micron Size	U.S. Screen	% Retained	% Passing
2000	<b>10</b>	0.2	99.8
1700	<b>12</b>	1.3	98.5
1400	<b>14</b>	2.7	95.8
1180	<b>16</b>	5.0	90.8
1000	<b>18</b>	7.3	83.6
710	<b>25</b>	19.1	64.4
500	<b>35</b>	19.1	45.4
425	<b>40</b>	7.8	37.6
355	<b>45</b>	7.4	30.2
300	<b>50</b>	5.9	24.3
212	<b>70</b>	9.6	14.7
180	<b>80</b>	3.4	11.3
150	<b>100</b>	3.0	8.3
75	<b>200</b>	5.2	3.2
10	<b>Pan</b>	3.2	
		100.0	

cumulative distribution (laser diffraction)			
Microns	% Passing	Microns	% Passing
3500	100	210	14.52
2940	100	180	11.33
2460	100	150	8.33
2060	100	120	5.74
1740	98.79	100	4.38
1460	96.95	86	3.62
1220	92.34	74	3.10
1020	84.69	62	2.68
860	75.53	52	2.38
720	65.30	44	2.15
600	55.00	36	1.92
500	45.36	30	1.74
420	37.09	26	1.60
360	30.73	22	1.44
300	24.29	18	1.27
250	18.86		