

Unical-S

Weeping Water, NE
Plant #1

Unical-S is a small particle sized granular CaCO₃ product processed from mined high calcium limestone in Weeping Water, NE with minimum calcium content of 38%



Particle Size Measurement -- Laser Diffraction

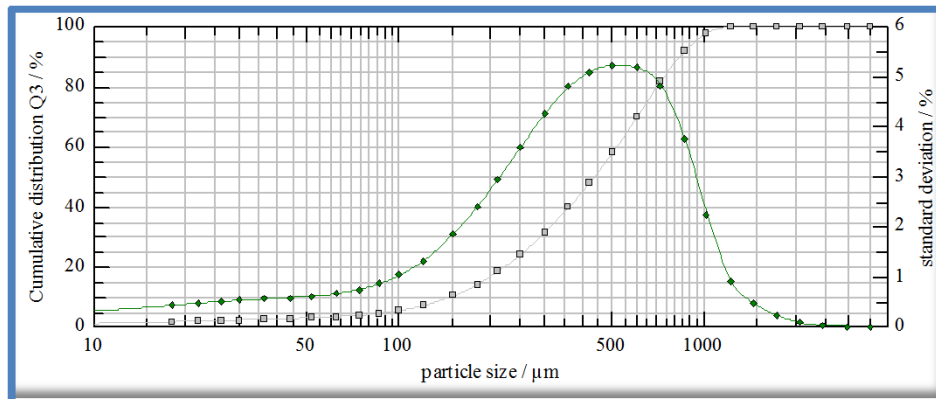
Average Particle Size = **438.65** microns

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

% Ca 38.76
%CaCO₃ 96.90

Typical Analyses		
Magnesium (Mg)	0.272	%
Silicon (Si)	0.73	%
Silica (SiO ₂)	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	46.35
Maximum	52.55
Minimum	42.46
H ₂ O	< 0.5%
Bulk Density (lbs./cu.ft.)	
Loose:	90
Packed:	103



μm = micron (1/1000 of a millimeter)

Particle Distribution--U.S. Screen Comparison				
18 X 200 mesh product				
Micron Size	U.S. Screen	% Retained	% Passing	
2000	10	0.0	100.0	
1700	12	0.0	100.0	
1400	14	0.1	99.9	
1180	16	0.6	99.3	
1000	18	2.4	96.9	
710	25	16.3	80.6	
500	35	22.6	57.9	
425	40	9.5	48.5	
355	45	9.4	39.1	
300	50	7.8	31.3	
212	70	12.7	18.6	
180	80	4.5	14.1	
150	100	3.9	10.2	
75	200	6.4	3.8	
10	Pan	3.8		
		100.0		

cumulative distribution (laser diffraction)			
Microns	% Passing	Microns	% Passing
3500	100	210	18.26
2940	100	180	14.07
2460	100	150	10.19
2060	99.99	120	6.92
1740	99.98	100	5.26
1460	99.94	86	4.37
1220	99.74	74	3.78
1020	97.62	62	3.32
860	91.69	52	2.99
720	81.57	44	2.74
600	69.55	36	2.48
500	57.94	30	2.26
420	47.83	26	2.09
360	39.76	22	1.90
300	31.28	18	1.67
250	24.03		