

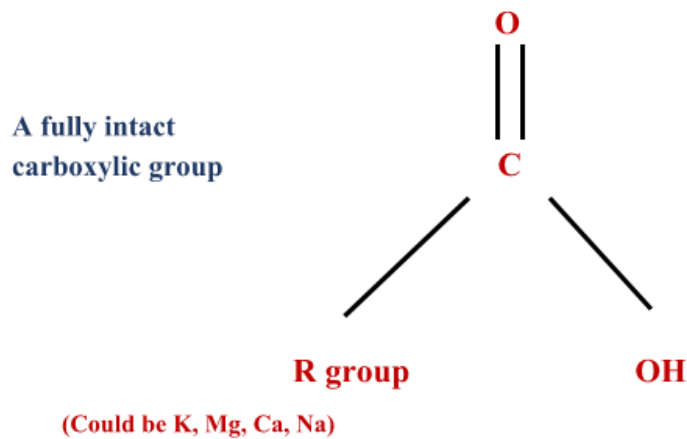
Analysis	Results (ppm)
pH	11.48
EC (Total Salt)	16.95
Nitrate Nitrogen	467.00
Chloride	67.10
Phosphorus	59.64
Potassium	11,601.70
Calcium	1,055.30
Magnesium	97.60
Sulphate	570.05
Sodium	147.86
Zinc	0.49
Manganese	1.12
Copper	0.12
Iron	109.89
Boron	2.25
Molybdenum	<0.01
Silicon	5.90
Ammonium Nitrogen	980.00

Testing Parameters	Original Solution	First Dilution	Second Dilution	Third Dilution	Fourth Dilution
pH	10.44	9.45	8.46	7.48	6.47
Wavelength @ 320nm	Absorbance: 3.09	Absorbance: 3.79	Absorbance: 3.78	Absorbance: 3.00	Absorbance: 2.55
Wavelength @ 420nm	Absorbance: 5.18	Absorbance: 5.18	Absorbance: 5.18	Absorbance: 5.18	Absorbance: 1.23
Wavelength @ 520nm	Absorbance: 5.05	Absorbance: 5.05	Absorbance: 5.05	Absorbance: 5.05	Absorbance: 0.60
Wavelength @ 620nm	Absorbance: 5.27	Absorbance: 5.27	Absorbance: 4.31	Absorbance: 4.31	Absorbance: 0.29
Wavelength @ 720nm	Absorbance: 5.09	Absorbance: 4.87	Absorbance: 1.87	Absorbance: 1.87	Absorbance: 0.14
Wavelength @ 820nm	Absorbance: 5.25	Absorbance: 2.78	Absorbance: 0.86	Absorbance: 0.86	Absorbance: 0.07

Notes: Absorbance levels give oxidation states. 6.0 is the highest level. A good product will hold onto absorbance levels after pH has dropped, indicating entire functional groups are attached including oxygen. Less oxygen, more drastic absorbance levels will drop.

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Illustration on what absorbance levels are telling you



As pH levels drop, the amount of bonds are revealed. The first bond (containing 2 electrons) is the carbon to “R” group. Second is the carbon to the OH⁻ group, then each oxygen bond at the top to carbon. We want the double bond attached at the top the most, as this dynamic gives quality.

For this product, the absorbance levels are telling us we have the entire carboxylic group intact as not only did the absorbance steadily decrease, but there was no drastic drop.

- Both caustic (KOH) and heat begins detaching the double bonded oxygen.