PF / MF METHOD ALKALINITY

Supplies

1. Phenolphthalein
2. Bromocresol Green
3. Distilled Water
4. Sulfuric Acid N/50
5. Titration Dish
6. Stirring Rod
7. 2 x Pipette (1 or 2mL for filtrate) (2 or 5mL for N/50)
8. Pipette Safety Bulb or pipette pump

Test Procedure

1. Using a pipette, measure 1 mL of filtrate into the titration dish.

2. Add 3 drops of phenolphthalein - if no color change occurs Pf = 0, go to step 4. If a pink or red color develops, Pf > 0.0, go to step 3

3. Using a pipette, add N/50 sulfuric acid continuously while swirling or stirring until the sample changes from red to colorless, (or original filtrate color). The number of mL of N/50 sulfuric acid required to reach this point is the Pf value.

4. To the previous sample that has been titrated to the Pf end point, add 3 drops of Bromocresol Green to get a light blue color. Continue titrating with N/50 while swirling or stirring until the color changes from light blue to apple green, this will indicate a pH of 4.0-4.5. This volume of N/50 plus the volume from the Pf titration is recorded as the Mf end point.

Use the table below to estimate the carbonate, (CO_3), bicarbonate (HCO_3), or hydroxyl (OH), present in the mud filtrate.

Pf/Mf Relation	Bicarbonate (mg/L HCO_3)	Carbonate (mg/L CO_3)	Hydroxyl (mg/L OH)
Pf = 0	1220 x Mf	0	0
Pf = Mf	0	0	340 x Mf
2Pf = Mf	0	1200 x Pf	0
2Pf > Mf	0	1200(Mf - Pf)	340(2Pf - Mf)
2Pf < Mf	1220 (Mf - 2Pf)	1200 x Pf	0