

1.2 Silica (Closed) Normal Measurement Cycle

Step Segment	Sample Flush	LED	Mixer	Dispense Reagent	Vent Fan	Step Segment Time - sec's	Description
Flush Cycle Dark Measurement	110 sec	12 sec	110 sec			115	Measages: 1-FLUSH MIX 2-WAIT 3-DARK 4-FLUSH MIX 5-WAIT Full cell rinse with new sample. Optcial LED turned off for 12 seconds at the beginning of the cycle to measure the Dark current. This cycle allows a minimum of 10 volumn changes of fresh sample in the 10mL colorimeter cell for the next analysis.
Add Reagent 1 Moly	200 sec		200 sec	~12sec		200	Measages: 1-R1 2-REACT Reagent 1 added and mixed. The silica is reacted with molybdate to make silicomolybdate. Sulfuric acid is added to insure a very acidic solution. This reagent consists of molybdate and sulfuric acid in one solution (R1) for the closed chemistry.
Add Reagent 2 Citric	110 sec		30 sec	~9sec		110	Measages: 1-R2 2-MIX 3-STABILIZE Addition of Reagent 2,The second reagent does three things. 1) it provides a surfactant for better wetting of the plastic surface of the cell for bubble removal and 2) the organic acid inhibits reaction of the molybdate with phosphate. The acid used for this step is citric acid in the Hach closed chemistry.
LED Adjustment	10 sec	10 sec				10	Measages: 1-REFERENCE Optical LED adjustment to keep the reference counts to ~7,600,000 counts. An initial measurement is made to determine how much the LED is to be addjusted then a wait period to let the LED stabilize.
Reference Measurement	10 sec					10	Measages: 1-REFERENCE Actual Reference Measurement
Add Reagent 3 FAA	85 sec		35 sec	~12sec		85	Measages: 1-R3 2-MIX 3-COLOR The addition of certain reducing agents (such as ANSA, Ascorbic Acid, FAS, or FAA) cause the formation of the heteropololy blue complex which needs silico or phospho molybdate as a precursor to form. The addition of the reductant causes a more intense color that is also more stable chemically. This permits the incredible detection limits possible with this method. The closed chemistry uses FAA but the function is the same in each case.
Sample Measurement	12 sec					12	Measages: 1-SAMPLE Last measurement of sample after color development
End Flush with same sample	30 sec		30 sec			30	Measages: 1-FLUSH This rince is to flush the cell of reacted material that produces fumes
Wait State Interval Mode						?	Measages: 1-WAIT Make up time depends on length of Inerval set by operator
Total Seconds =						582	
Cycle Time Min.'s =						9.7	