

Sample Requisition No - RDKL/FW/2324/SR00059 SR00060

Allocation Date - 08/02/2024 Parameter - T-Hardness

Test start Date - 09.02.2024 Test End Date - 09.02.2024

Due Date - 14.02.2024

Name of Supervisor - Md. A. Rafique

Total Hardness

Test Method: APHA 24th Ed. 2340-C, Part: 2000, 124-126.

Standardization of EDTA -

10 ml of CaCO_3 Sol^m ($\approx 10 \text{ mg}$ of CaCO_3) $\approx 9.9 \text{ ml}$ of EDTA Sol^m
 $\therefore N = \text{mg equivalent of } \text{CaCO}_3 \text{ per ml of EDTA} = \frac{10}{9.9} = 1.0101$

Sample Code	Sample Volume (ml)	Final Reading (ml)	Initial Reading (ml)	Volume of EDTA Consumed (ml)	Result (mg/l)
Blank	50	0.1	0	0.1	-
2324/RDKL/FW/FW/L00112	50	22.8	20	2.8	57
2324/RDKL/FW/FW/L00113	50	25.6	22.8	2.8	57
2324/RDKL/FW/FW/L00114	50	28.4	25.6	2.8	57
2324/RDKL/FW/FW/L00115	50	36.4	28.4	8	162
2324/RDKL/FW/FW/L00116	50	39.1	36.4	2.7	55 ✓

Calculation -

$$\text{T-Hardness (mg/l)} = \left[\frac{\text{Volume of Consumed EDTA (ml)} \times 1000 \times N}{\text{Sample Volume (ml)}} \right]$$

Ajmit Verma
12/02/2024

Q-57

12.02.24

Sample Requisition No - RDKL/FW/2324/SR00059 SR00060⁴
 Allocation Date - 08.02.2024 Parameter - Calcium & Magnesium
 Test Start Date - 09.02.2024 Test End Date - 09.02.2024
 Due Date - 14.02.2024 Name of Supervisor - Md. A. Rafique

Calcium & Magnesium

Test Method: APHA 23rd Ed. 3500 CaB Part 3000, 254 - 255
 APHA 24th Ed. 3500 MgB Part 3000, 274

Standardization of EDTA -

10 ml of CaCO_3 Solⁿ ($\approx 10 \text{ mg CaCO}_3$) $\approx 9.8 \text{ ml of EDTA Sol}^n$
 $\therefore N = \text{mg equivalent of CaCO}_3 \text{ per ml of EDTA} = \frac{10}{9.8} = 1.0204$

Sample Code	Sample Volume (ml)	Final Reading (ml)	Initial Reading (ml)	Volume of EDTA Consumed (ml)	T-Hardness as CaCO_3 (mg/l)	Ca-Hard (mg/l)	Ca^{2+} (mg/l)	Mg^{2+} (mg/l)
2324/RDKL/FW/FW/L00112	50	16.7	15	1.7	57	35	14	5
2324/RDKL/FW/FW/L00113	50	18.5	16.7	1.8	57	37	15	5
2324/RDKL/FW/FW/L00114	50	20.1	18.5	1.6	57	33	13	6
2324/RDKL/FW/FW/L00115	50	25.5	20.1	5.4	162	110	44	12
2324/RDKL/FW/FW/L00116	50	27.1	25.5	1.6	55	33	13	5

Calculation -

$$\text{Ca-Hard (mg/l)} = \left[\frac{\text{Volume of EDTA Consumed (ml)} \times 1000 \times N}{\text{Sample Volume (ml)}} \right]$$

$$\text{Ca}^{2+} \text{ (mg/l)} = \text{Ca-Hard} \times 0.40$$

$$\text{Mg}^{2+} \text{ (mg/l)} = [\text{T-Hard} - (\text{Ca-Hard})] \times 0.249$$

Ajeet Kumar
12/02/2024

Burst

19.02.24