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**Doc No :** PDAE202**Date :** 01-02-2024**Type :** AQUASOL**Product Code:** AE202**PRODUCT DATA SHEET****1 INFORMATION**

CODE: AE202

PARAMETER: CALCIUM HARDNESS

RANGE: 5-100 mg/l as CaCO<sub>3</sub>**2 METHOD**

When EDTA is added to water containing both calcium and magnesium, it combines first with the calcium. Calcium can be determined directly, with EDTA, when the pH is made sufficiently high that the magnesium is largely precipitated as the hydroxide and an indicator is used that combines with calcium.

**3 APPLICATION**

Drinking Water, Mineral Water, Well Water, Swimming Pool Water, Surface and Ground Water, Aquaculture, Boiler Water, Process Water, Industrial Wastewater, Effluent Water, Cooling System Water, Chiller Water etc

**4 INTERFERENCE**

Under conditions of this test, the following concentrations of ions cause no interference with the calcium determination: Cu<sup>2+</sup> -2 mg/l; Fe<sup>2+</sup> - 20 mg/l; Fe<sup>3+</sup> - 20 mg/l; Mn<sup>2+</sup> -10 mg/l; Zn<sup>2+</sup> -5 mg/l; Pb<sup>2+</sup> -5 mg/l; Al<sup>3+</sup> - 5 mg/l and Sn<sup>4+</sup> - 5 mg/l. Orthophosphate precipitates calcium at the pH of the test. Strontium and barium give a positive interference and alkalinity in excess of 300 mg/l may cause an indistinct end point in hard waters.

**5 METHOD CONTROL**

To Check test reagents,

Prepare 1000 ppm standard solution- Weigh 1 gm anhydrous calcium carbonate powder into volumetric flask, then add small quantity of 1:1 HCL until all CaCO<sub>3</sub> has dissolved. Add 200ml distilled water and boil for a few minutes to expel CO<sub>2</sub>. Cool, add few drops of methyl red indicator, and adjust to the orange colour by adding dilute NH<sub>4</sub>OH or 1:1 HCL as required. Then dilute it to 1 liter with distilled water. Dilute this standard solution with distilled water to 500 mg/l CaCO<sub>3</sub> and analyse as described in procedure card.

**6 REAGENTS AND ACCESSORIES**

Reagents: CH1(1Nos), CH2(1Nos), TH3(2Nos)

Accessories: 25ML Plastic Test Jar(1Nos), Plastic Spoon(1Nos), Procedure Label(1Nos)

**7 STORAGE**

The test reagents are stable up to the date stated on the pack when stored closed at ambient temperature

**8 REFERENCE**

APHA Standard Methods, 22nd ed., Method 2340-C – Standard Methods for Chemical Analysis of Water and Waste water. Diehl, H., C.A. Goetz & C.C. HACH. 1950.

**9 DIRECTION FOR USE**

1. Take 10 ml. of water sample to be tested in the test jar.
2. Add one spoonful (provided herewith) of CH 2.
3. Mix well to dissolve.
4. Then add 10 drops of CH 1.
5. Now drop wise\* add TH 3, counting the number of drops while mixing, until the colour changes from red to violet.

Calculations:

Calcium as ppm CaCO<sub>3</sub> = 5 X [No. of drops of TH3]