FIELD PROCEDURE FOR SV-120 IN DRILLING MUD

Equipment

1. 150 ml beaker
2. Graduated cylinders (10 ml, 25 ml and 100 ml)
3. Field mixer with powerstat or magnetic stirrer
4. 10 ml syringe
5. 20 ml syringe
6. Large 4" plastic funnel
7. Fluted filter paper (S & S No. 588 size 18.5 cm)
8. pH paper
9. 10 and 20 ml volumetric pipettes

Solutions

1. Glacial acetic acid
2. Ammonium Hydroxide (concentrated)
3. Distilled water
4. Calcium Solution II (30% NaCN Solution)
5. 10% Ammonium Fluoride
6. Manver indicator (from Hardness Kit)
7. 4% Formaldehyde solution
8. 0.01 M Versenate solution (from Hardness Kit)
9. Calcium Solution I (10% Hydroxylamine Hydrochloride)

Procedure

1. From well-mixed sample take 10 ml using a syringe. (Note: if total hardness exceeds 50,000 mg/l Ca++, take a 5 ml sample.)
2. Place in 150 ml beaker or other suitable container.

3. Dilute to 40 ml with distilled water.
4. Add 10 ml Glacial acetic acid.
5. Stir 10 minutes with mixer or magnetic stirrer. If neither is available, mix with stirring rod for at least 3 minutes.
6. Add 15 ml Ammonium Hydroxide. Make sure solution is above pH 9 before proceeding to next step.
7. Add 3 droppersful of Calcium Solution I and 3 droppersful Calcium Solution II in that order.
   NOTE: Calcium Solution II is extremely poisonous (Sodium Cyanide). Do not add to acidic solution, as Cyanide gas will be liberated.
8. Add 10 ml 10% Ammonium Fluoride solution. NOTE: If total hardness exceeds 100,000 mg/l Ca++, add 20 ml 10% Ammonium Fluoride solution.
   NOTE: Ammonium Fluoride is also poisonous. Take same precautions as above.
9. Bring up to 100 ml with water using either a 100 ml volumetric flask or 100 ml graduate.
10. Mix well and filter through S & S fluted paper into a dry, clean beaker or suitable container.
11. Take 10 ml or 20 ml of filtrate and place in clean beaker or flask.
12. Dilute with distilled water up to about 40 ml.
13. Add a few drops of Manver Indicator. If solution is blue, proceed directly to Step #14. If solution is red, titrate slowly with Standard Versenate to the regular blue endpoint; the amount of Versenate Solution does not need to be recorded, as it is not used in the calculations.
14. Add 5 ml concentrated Ammonium Hydroxide. The pH should be between 10 and 11.
15. Add 5 ml 4% Formaldehyde solution.
16. **Let stand at least two minutes**. Solution will turn from blue to wine-red if zinc is present.
17. Titrate with Versenate until wine-red changes to sky blue. (Similar to endpoint).

CALCULATIONS

$$\text{Lbs/bbl SV-120} = \frac{200 \times \text{ml Versenate}}{(\text{ml sample}) \times (\text{ml Filtrate})}$$

ml sample = sample volume from Step 1

ml filtrate = filtrate volume from Step 2

SV-120 mg/liter = (SV-120 lbs/bbl) x (2860)

For more information, please contact us:

ExpotechUSA
10700 Rockley Road
Houston, Texas 77099
USA

281-496-0900 [voice]

281-496-0400 [fax]

E-mail: sales@expotechusa.com

Website: www.ExpotechUSA.com