USED OF COPPER ION TEST

1. Detect complete circulation of amine corrosion inhibitor.
2. Evaluate absorption efficiency of amines.
3. Determine presence of amine corrosion inhibitor in produced fluids over extended periods of time.

MATERIALS

1. Copper Sulfate Solution - 20% by weight
2. Inhibitors in xylene (xylol) - 20% volume
3. Sand blasted steel coupons with attached copper wire
4. Paper Cups
5. Produced Oil
6. Produced Water
7. Kerosene

PROCEDURE FOR USES A-1 AND A-3

1. Dip coupon in produced water for 6 minutes holding on to copper wire.
2. Dip coupon in produced oil for 6 minutes.
3. Dip coupon in treated produced oil for 6 minutes.
4. Remove and wash with kerosene.
5. Dip in copper sulfate solution for 30 seconds.
6. Record and rate protection as 1 to 10. (The smaller the concentration of amine the greater the degree of copper plating will be observed.)

NOTE: Sweet systems often require longer exposure in the copper sulfate solution.

PROCEDURE FOR USE NO. 2

1. Same as C-1 and C-2
2. Add different amounts of 20% inhibitor solutions to the produced oil, i.e. 2, 3, 3.5, or 4 ml to 50 ml of produced oil. Using the same amounts of different inhibitors for each comparison.
3. Dip coupons in treated oil for 6 minutes. Follow same procedure as in C-4, C-5, and C-6. Rate inhibitors according to the minimum concentration necessary to prevent copper plating of the test coupons.

NOTE: Test coupons should be used only once and discarded.
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