

**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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