



SULFITE ION CONCENTRATION

In many mud systems, especially those, which contain high levels of salt, it is necessary to use an oxygen scavenger to reduce the dissolved oxygen content in the drilling mud in order to reduce drill string corrosion to acceptable levels. One method of reducing oxygen corrosion is with the use of any oxygen seeking ion like the sulfite (SO_3) ion, which will react with the dissolved oxygen present in the drilling mud. In order to minimize oxygen corrosion it is necessary to maintain a residual sulfite concentration in the drilling mud at all times. Usually, residual concentrations in the order of 300 mg/L or greater are required to reduce corrosion to acceptable levels. Corrosion results should always be verified with the use of corrosion rings.

One method of determining the residual sulfite concentration is with the use of the HACH Model SU-5 Sulfite Kit. The sulfite concentration may be determined using mud or mud filtrate.

EQUIPMENT AND CHEMICALS

Equipment	Product Code
1. Hach Model SU-5 Sulfite Kit	EX1010

TEST PROCEDURE

1. Measure a sample by filling the sample bottle to the indicated mark, (10 mL).
2. Add the contents of one Sulfite 1 reagent powder pillow. Swirl to mix.
3. Add the contents of one sulfamic acid powder pillow. Swirl to mix.
4. Titrate with sulfite 3 reagent using the eye dropper, (low and high range Sulfite 3 reagent is available). Add the reagent drop wise with continual swirling of the sample until a permanent gray-blue color develops. Note the number of drops required to reach the end point.

CALCULATION

mg/L sulfite, (SO_3) = 0.64 x No. drops low range sulfite 3

mg/L sulfite, (SO_3) = 6.4 x No. drops high range sulfite 3

WARNING: The reagents contained in the kit are harmful. Avoid contact with eyes and skin. Do not ingest. Read warning on chemical container.