SANI-CHECK® SRB

Test System for Counting Sulfate Reducing Bacteria

DESCRIPTION OF TEST

Anaerobic sulfate reducing bacteria are ubiquitous in the environment. They are found in secondary oil recover effluents, estuarine waters, deep wells, cooling waters, metalworking fluids, water-based hydraulic fluids, and petroleum based products that in some way become contaminated with water. The growth of sulfate reducing bacteria can be responsible for fouling, objectionable hydrogen sulfide odors, corrosion of metals, and pitting of concrete. It is essential that these organisms be monitored and controlled to prevent the damage caused by their metabolic activities.

The SANI-CHECK SRB test kit contains tubes of culture media that are specifically formulated to promote the growth of anaerobic sulfate reducing bacteria. The medium contains reducing agents that maintain a low oxidation reduction potential and thus allows for maximal growth. When the organisms grow in this medium, sulfate is reduced to sulfide and a black precipitate of iron sulfide is formed. The degree of blackening through the medium is directly proportional to the amount of sulfate reducer growth.

SANI-CHECK SRB is designed to be used in areas where little or no formal laboratory facilities are available. Each test kit contains the following materials for 25 tests: 25 SANI-CHECK SRB tubes, 25 identification labels, 25 applicators, one bottle mineral oil, one sample vial with cap, one alligator clip, and one instruction sheet.

Collection of Sample

Oily Sample
Microorganisms are unable to grow in the absence of water. In contaminated oil/water systems, the organisms will be found at the interface and in the water layer. Therefore, it is important that sampling be done from these locations. A sample vial is included with SANI-CHECK SRB. The vial should be filled with a freshly collected sample that has only a minimal oil layer on its surface. Excess oil can be skimmed from the surface of the sample with the enclosed dropper.

Water and Other Samples
No special sampling precautions are necessary. The sample may be tested using the provided vial or any other suitable container.

DIRECTIONS FOR USE

1. Open a SANI-CHECK SRB tube by peeling off the protective seal and removing the cap. Grip an applicator with the alligator clip and insert applicator into liquid sample. Immerse for approximately 5 seconds, withdraw, and drain excess fluid by running applicator along the inner lip of vial or other sample container. [Dry surfaces may be sampled by pre-wetting the applicator with tap water and swabbing a representative portion of the test area.]
2. Holding applicator with clip, insert into tube of agar, taking care to center it as much as possible. Push the applicator into the tube until it is about even with the surface of the agar.
3. Add 2-3 drops of mineral oil to the tube and cap the tube.
4. Incubate the tube at 30°C or within 3°C of the sample environment if the temperature is greater than 30°C.
5. Observe the tube regularly for results and compare to the chart below.

	Sulfate Reducers/ml*				
Days of Incubation:	1	2	3	4	5
TUBE APPEARANCE					
completely black	$\geq 10^6$	10^6 - 10^5	10^5 - 10^4	10^4 - 10^3	10^3 - 10^2
narrow zone of black around applicator center . .	10^6 - 10^5	10^5 - 10^4	10^4 - 10^3	10^3 - 10^2	10^2 - 10^1
no reaction	$<10^5$	$<10^4$	$<10^3$	$<10^2$	$<10^1$

*Figures shown have been calculated by Biosan Laboratories using anaerobic plate counts and a pure culture of *Desulfovibrio desulfuricans* [ATCC #7757]

≥ greater than or equal to
< less than

Interpretation of Quantitative Results

Sulfate Reducers/ml	Interpretation
10^5 (100,000) or more/ml	Heavy
10^3-10^4 (1,000-10,000)/ml	Moderate
10^2-10^3 (100-1,000)/ml	Low
10^1-10^2 (10-100)/ml	Very Low
10^1 (10) or less/ml	Generally Insignificant

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