AMT RAPID BAC SRB

AMT-I-B-002 (5% salinity)

Sulfate-Reducing Bacteria Test for Industrial Water

BRINKING THE LABORATORY TO THE FIELD

AMT Scientific brings the testing laboratory where it is needed most—the field. Our tests are easy to use, fast and reliable, have an extended shelf life and present a unique, cost-effective way to perform microbiological analysis in the field or the laboratory.

Our tests allow you to identify microorganisms that traditionally could only be cultured or identified using expensive equipment in a laboratory setting for a fraction of what a laboratory charges. When using AMT tests, you can make the decisions in the field, where they count.

Read all directions entirely before running this test.

SUMMARY AND EXPLANATION

Sulfate Reducing Bacteria (SRB) can be responsible for decreased heat-transfer performance in heat exchangers, induction of corrosion of structural material in cooling systems, increased pumping costs, increased loading, induction of corrosion fatigue or stress corrosion and blockage of filter systems. Detection and control of this type of bacteria is imperative to proper cooling system operation.

One of the classic concepts for maintaining an industrial system free of the deleterious effects of SRB caused MIC is to keep the system clean and free of these microorganisms. Although in practice this is a very difficult task, one of the most important steps is use of the proper detection and monitoring methods for microorganisms that cause corrosion.

AMT RAPID BAC for Sulfate-Reducing Bacteria is a multi-purpose media based on a modified Postgate B media for the detection and cultivation for Sulfate-Reducing Bacteria. The test is self-contained and no special laboratory equipment is necessary for conducting this test.

PRESENCE/ABSENCE METHOD

If using the supplied sample cup, triple rinse the cup with the water sample prior to use.

- Gather the sample in the supplied sample cup filling to the 25 mL line or preferably in a single use sterile sample container.
- (Optional) If samples contain chlorine, add 5 drops of the De-chlorination solution for every 25 mL of sample. Swirl to mix and let sit 2 minutes.
- Remove ampoule from box and carefully remove and save the provided safety cap. Inspect the ampoule tip for breakage. If broken discard properly and get a new ampoule.
- With an unbroken ampoule, place the tip (without safety cap) in the sample container with the tip against the sample container wall holding the ampoule at a 45° angle. Gently push the tip against the sample container wall with a slight twisting motion. The ampoule tip will break and the sample will automatically be drawn into the ampoule. Make sure to keep the ampoule tip in the sample until it has finished filling.
- Remove the ampoule from the sample.
- Incubate the ampoule at 25 °C. Check after 24 and then again every 24 hours (for up to 30 days) for a Black color. Black color indicates the presence of Sulfate-Reducing Bacteria.
- Sterilize sample container with 10% bleach before next test. For example, to a 20 mL bacterial sample, add 2 mL or ~40 drops bleach solution. Rinse 3 times with sterile milli-Q water to remove residual bleach.
- Note: The ampoule will show light blue color in the beginning of the test if low amount of oxygen is present in the sample. After about 1 day, the light blue color should fade away.
- If the test result is positive, estimate the bacteria population by referring to the chart below.

Approximate bacteria population:

Elapsed Time (days)	Approximate bacteria population (CFU/mL)	Contamination Severity
1	$>10^6$	Very High
2	$10^5 – 10^6$	High
3	$10^4 – 10^5$	High
4	$10^3 – 10^4$	Moderate
5	$10^2 – 10^3$	Moderate
6 - 7	$10 – 10^2$	Low
8 - 9	<10	Low

EXPECTED RESULTS

Ampoules positive for Sulfate-Reducing Bacteria (SRB) will produce a black color and or black precipitate and possibly a Hydrogen Sulfide (rotten egg) order.

LIMITATIONS OF PROCEDURE

AMT RAPID BAC SRB is used for cultivating anaerobic Sulfate-Reducing Bacteria in Industrial Cooling Water and Waste Water. The test contains Methylene Blue (oxygen indicator) that will turn blue in the presence of oxygen and clear in the absence of oxygen. Initially the test will start blue but should turn clear within 30-45 minutes of incubation. Tubes that do not go from blue to clear will not give proper results and should be discarded.

STORAGE

Upon receipt, store tubes in the dark at 2 – 25°C. Avoid freezing and overheating. Ampoulated media stored as indicated may be inoculated up to the expiration date. Minimize exposure to light.

PRODUCT DETERIORATION

Do not use ampoules if they show evidence of microbial contamination, discoloration, or other signs of deterioration.

EXPIRATION DATE

The product is stable if stored properly for 1 year from manufacture. The expiration date applies to media stored at or below 30 °C without direct exposure to light.

QUALITY CONTROL ORGANISMS

Escherichia coli ATCC 25922. Good Growth.
Desulfovibrio vulgaris ATCC 29579. Good Growth.

WARNING AND PRECAUTIONS

- For *in vitro* Diagnostic Use.
- For laboratory and field use by trained professionals.
- The AMT RAPID TM is a glass ampoule with a sharp tip when activated. USE EXTREME CAUTION when breaking the tip. Always carefully apply the provided safety cap.
- Dispose of broken unused ampoules in a broken glass receptacle.
- Dispose of used ampoules in an appropriate sharps container or sealed puncture resistant receptacle then offer for biohazard processing according to local, state and Federal regulations.
- Keep away from children.
- Not for use as a diagnostic tool on humans or animals.
- Observe aseptic techniques and established precautions against microbiological hazards throughout all procedures before, during and after use.
- Prepared ampoules, specimen containers and other contaminated materials must be sterilized by autoclaving or disinfectant solution before discarding.

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