

# AMT RAPID BAC IRB

## AMT-I-B-004

Iron-Related 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

Iron-Related Bacteria (IRB) can be found in potable water, well water and industrial water. IRB's are known to cause discoloration of water and also deposits of iron on pipes in industrial water systems.

These deposits, in time, will slough and plug lines, foul pumps, valves. IRB's oxidize ferrous to ferric ion, which is precipitated as ferric hydrate. Iron may be obtained from the pipe itself or from the water. The amount of ferric hydrate deposited is usually very large in comparison with the amount of bacteria present. Some bacteria belonging to this group which do not oxidize ferrous iron may, nevertheless, indirectly cause it to be dissolved or deposited. During growth, they either liberate iron by utilizing organic radicals to which the iron is attached or they alter environmental conditions to permit the solution or deposition of iron.

### 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 7 days) for a rust color at the air/water interface or a rust deposit on the bottom of the tube. Rust color deposits indicate the presence of Iron-Related 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.
- 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 <sup>6</sup>	Very High
2	10 <sup>5</sup> – 10 <sup>6</sup>	High
3	10 <sup>4</sup> – 10 <sup>5</sup>	High
4	10 <sup>3</sup> – 10 <sup>4</sup>	Moderate
5	10 <sup>2</sup> – 10 <sup>3</sup>	Moderate
6 - 7	10 – 10 <sup>2</sup>	Low
8 or more	<10	Low

### EXPECTED RESULTS

Ampoules positive for Iron-Related Bacteria (IRB) will produce a rust color at the air/water interface and/or a rust deposit at the bottom of the tube.

### LIMITATIONS OF PROCEDURE

AMT RAPID BAC IRB is used for cultivating aerobic Iron-Related Bacteria in Industrial Cooling Water and Waste Water. A positive reaction is a rust colored ring on the water / air interface, or a rust deposit at the bottom of the tube. Samples with Low levels of IRB's can take up to 7 days to show a positive.

### STORAGE

Upon receipt, store tubes in the dark at 2 – 25°C. Avoid freezing and overheating. Ampouled 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.

### 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.

## **CONTACT US**

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