

**INSTRUCTIONS**

*Read all instructions before sample collection*

**Before collecting samples**, review contents of this test kit (page 3). This kit will allow you to test *twenty* liquid samples. If you require technical assistance, please contact BTI Products.

**Collect samples from** remote inspector’s test values or remote branch lines.

**Test 7, 30, and 60 days** after initial treatment. Test thereafter at every inspector’s test and flow test (minimum of every 6 months).

**Let water for sampling flow** long enough to ensure water from Fire Protection System (FPS), not water/debris in drainpipe, is being collected. Depending on your FPS set-up, you may need to flow water for several minutes before collecting water to test.

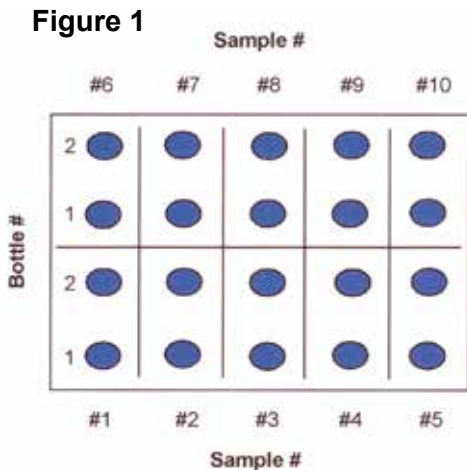
**Do not contaminate** samples by touching with hands or tools.

**Process sample** immediately after collection.

**Important: Properly dispose of all testing materials. Federal and local laws apply.**

**SECTION 1. MICROBIOLOGICAL TEST**

- Using a marking pen, label media tray and media bottles as shown in Figure 1.



- Spray or wipe inside and outside of pipe from which water will be collected with 70% isopropyl alcohol (available from grocery or drugstore). Wait one minute.
- Rinse sampling tube once with 70% isopropyl alcohol.
- Rinse sampling tube several times with fresh water sample.
- Fill 50 ml sampling tube with water sample.
- Remove and discard wrappers from a sterile 1 ml syringe and an 18g needle. Without touching tip of syringe or opening of needle, place needle onto syringe. Tighten needle onto syringe by pushing in and turning needle shield clockwise.
- Remove needle shield. Place syringe/needle into water in sampling tube.
- Withdraw **1 ml** of water by gently pulling up on syringe plunger until water reaches **1 ml** mark.

- Flip plastic cap off first purple-capped bottle (labeled #1). If you touch rubber stopper, wipe stopper with alcohol wipe.
- Insert syringe needle through rubber stopper of first bottle. Inject water into bottle by depressing plunger.
- Keep needle in bottle. Mix solution by drawing up **1 ml** of media-sample mixture and then expelling it back into bottle. Repeat several times.
- Using the same syringe and needle, now withdraw **0.1 (one-tenth!) ml** of solution from purple bottle #1 and inject into purple bottle #2.
- Repeat steps 2 through 12 for water samples #2 through 20 using a new syringe and needle for each new water sample.
- Store all bottles of media in kit box at room temperature.
- After 2, 5, and 15 days, compare your test bottles to Positive Reactions Sheet (page 5) to determine number of bottles, if any, that are positive for bacteria.
- Record results in attached Data Sheet (page 6).

**Microbiological test results:**

- A positive reaction in bottle #1 indicates low numbers of low nutrient bacteria (LNB) (1 to 10 per ml of water sample).
- Positive reactions in bottles #1 and #2 indicate high levels of low nutrient bacteria (LNB) (greater than or equal to 100 per ml of water sample).

## SECTION 2. CHEMICAL TESTS

### 2A. Dissolved Oxygen Test

1. Place stopper with hose, small end first, up into pipe from which water sample will be collected. Stopper should seat so that half the stopper is inside pipe and other half is exposed.
2. Flow water through hose until water coming out is a stream without air bubbles.
3. Place end of hose into 50 ml sampling tube (from blue plastic box) until hose touches bottom of tube.
4. Flow water through hose and into bottom of sampling tube until tube is overflowing and there are no air bubbles present in water in tube.
5. While still flowing water into sampling tube, place dissolved oxygen ampoule, tapered end first, into sampling tube until ampoule is <sup>3</sup>/<sub>4</sub> submerged in water.
6. Snap tip by *gently* pressing end of ampoule against side of sampling tube. Let ampoule fill with water.
7. Remove ampoule from sampling tube and invert several times, allowing air bubble to travel from end to end to mix contents. **Caution: Avoid injury from touching broken tip of ampoule.**
8. Wait **2 minutes** for color development.
9. Compare ampoule color with attached Dissolved Oxygen Color Chart (page 4). Chart should be illuminated from above by a bright, white light. Be sure to place ampoule on both sides of color chart before concluding which gives the best match. Placing ampoule between and parallel to color bars aids in readings.
10. Record dissolved oxygen level in attached Data Sheet (page 6).
11. Discard sample, and remove stopper with hose from pipe.

### 2B. Residual MICtreat® FPS Chemical Test

1. Rinse 50 ml sampling tube with fresh water sample.
2. Fill sampling tube to top with water sample.
3. Follow THPS test kit (in blue plastic box) instructions.
4. Record THPS levels in attached Data Sheet (page 6).
5. Discard sample.

### 2C. Acceptable Test Results

Following are acceptable results for FPS properly chemically cleaned and then treated using MICtreat® FPS Chemical:

- Dissolved oxygen levels should be less than 1 ppm. *Note: Dissolved oxygen levels may not drop immediately.*
- MICtreat® FPS Chemical residuals, measured as THPS, should be at least 100 ppm.
- Bacteria levels should be zero.

If any water sample has results outside the acceptable ranges, repeat the test. If the second test shows results outside the acceptable range, take appropriate action to remedy the problem. Contact BTI Products at 970.884.4629 for assistance.

## MICtreat® FPS MONITOR:

### List of Kit Contents:

1. 40 Bottles BTI-LNB Medium (Purple Flip-Off Cap)
2. 1, 50 ml Sampling Tube
3. 1 Stopper with Plastic Hose
4. 20, 1 ml Syringes
5. 20, 18g Needles
6. 20 Alcohol Prep Pads
7. 20 Dissolved Oxygen Ampoules
8. 1 THPS Test Kit (Blue Box)

## WARRANTY

**BTI Products, LLC's** products are warranted by **BTI Products, LLC** to perform as described in the technical literature supplied with each product, provided the products are used, stored, and maintained in accordance with the directions provided. They must also be used before the expiration date. Adequate quality control must be done by the user of the products.

**BTI Products, LLC** disclaims any implied warranty of merchantability or fitness of its products for any other purpose than described in its technical literature, and in no event shall **BTI Products, LLC** be held liable for any consequential damages arising out of the aforesaid express warranty.

Should you have questions about this product or any of the products and services we provide, please call or write:

**BTI Products, LLC**  
652 Silver Hills Road  
Bayfield, CO 81122  
970.884.4629  
products@bti-labs.com  
www.bti-labs.com

*We welcome all comments and inquiries.*

**Usage & Storage:** Test kit must be used by expiration date printed on kit box label. Store all test materials in a cool, dry, dark place. Do not eat or drink any of the contents of this kit. Keep out of reach of children. Safety Data Sheets available upon request.

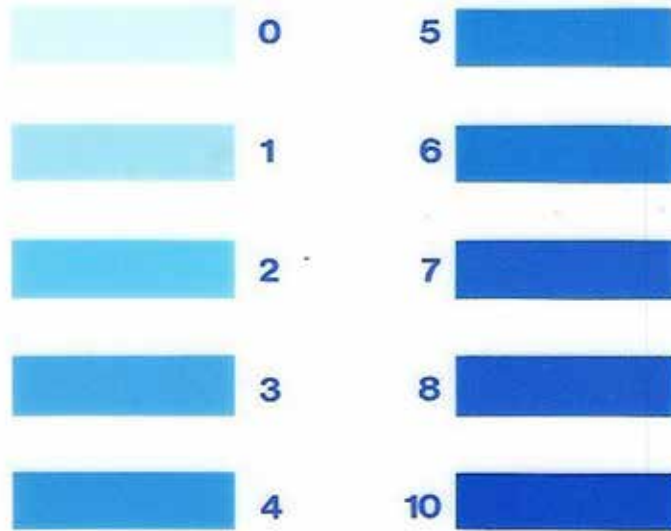
**Disposal of Test Materials:** Properly dispose of all syringes, needles, ampoules, media bottles, and test materials. Needles must be destroyed before disposal by cutting or bending back the needle. Syringes must be destroyed by breaking or shattering the barrel. Federal and local laws apply.

Used media bottles must be properly disposed of according to local regulations. Alternatively, bottles may be returned to **BTI Products, LLC** for proper disposal for a fee of \$30.00\* per kit.

# Dissolved Oxygen Color Chart

## DISSOLVED OXYGEN

PPM



mg/L

CHEMetrics, Inc.

Cat. No. C-7510

## MICtreat® FPS Monitor Kit - Positive Reactions Sheet



1. Uninoculated (Negative)
2. Positive—Cloudy with possible slime formation



BTIproductsLLC

# MICtreat® FPS Monitor Data Sheet

Sample #	SAMPLE INFORMATION		DATES		RESULTS		
	Sample Name/ Location	Date Sampled	Date LNB Results Read	Dissolved Oxygen (ppm)	THPS (ppm)	LNB (#mL)	
Initial fill:							
7 days:							
30 days:							
60 days:							
Initial fill:							
7 days:							
30 days:							
60 days:							
Initial fill:							
7 days:							
30 days:							
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