



## Aquagenx™ CBT H<sub>2</sub>S Presence/Absence (P/A) Kit Instructions for Use: Drinking Water

### Overview

The Aquagenx® CBT H<sub>2</sub>S P/A Kit detects Hydrogen Sulfide (H<sub>2</sub>S) producing bacteria in a 100 mL sample. When the H<sub>2</sub>S powder growth medium metabolizes H<sub>2</sub>S-producing bacteria, the color of the water turns black, indicating the presence of H<sub>2</sub>S-producing bacteria.

H<sub>2</sub>S-producing bacteria has been evaluated repeatedly as a fecal indicator bacterium for water quality testing. Many studies show H<sub>2</sub>S provides both qualitative (presence or absence) and quantitative data (relative concentrations) that are comparable to and sometimes higher than those of the usual fecal indicator bacteria such as *E. coli* and thermotolerant (fecal) coliforms.

### Shelf Life

Shelf life of H<sub>2</sub>S growth medium is 2.5 – 2.9 years after date of manufacture.

### Storage

Cold chain for H<sub>2</sub>S growth medium not required. Recommended storage at 10°-25° Celsius. Protect growth medium from moisture, heat and bright light.

### Summary of Test Procedures for CBT H<sub>2</sub>S P/A Kit



### How to Interpret Color-Change Test Results

<b>Color in Thio-Bag</b>	<b>Yellow/Golden Brown in ambient light</b>	<b>Black/Black Gray in ambient light</b>
<b>H<sub>2</sub>S-producing bacteria</b>	<b>Negative</b>	<b>Positive</b>

Black (positive) presence of H<sub>2</sub>S can look fuzzy. Dirt particles and debris in sample will have sharper edges and look like specs.

If only dark particles or debris are found, the sample is negative for H<sub>2</sub>S.

## Procedural Notes

### 1. Prepare work area

- Sanitize work area with disinfectant cleaning solution, paper towels or wipes

### 2. Collect 100 mL water sample with Whirl-Pak™ Thio-Bag™

- Label bag or attach barcode asset tag to Thio-Bag.
- White tablet in Whirl-Pak™ Thio-Bag™ is sodium thiosulfate, which neutralizes residual chlorine in sample. Do not remove.
- Wearing disposable, thin plastic gloves is recommended. If you don't have gloves, avoid touching inside of Thio-Bag with bare hands.
- Limit the collection of debris/particles in Thio Bag as water sample is collected to avoid confusing debris/particles with potential positive black/gray results for H<sub>2</sub>S.
- Fill Thio Bag to 100 mL fill mark. Record sample details.

### 3. Add H<sub>2</sub>S growth medium to sample in Whirl-Pak™ Thio-Bag™

- Open growth medium powder pillow with scissors and pour powder growth medium into Thio-Bag.
- Do not touch growth medium with bare fingers or hands.
- Close Thio-Bag with Whirl-Pak seal.
- Dissolve medium in sample. Powder medium is dissolved when you cannot see any white powder in sample. Sample liquid may turn pale yellow color.

### 4. Incubation Period and Temperatures

- During the incubation period, CBTs can develop an odor. To control odor, place CBTs in another sealed plastic bag or container during the incubation period.
- Ambient temperature incubation works at 25°- 37°C.
- The CBT works at variable temperatures. Constant temperature control in an incubator is not required but is recommended in cooler temperatures if available.

#### Recommended Incubation Periods at Ambient Temperature Conditions:

35-37°C: Incubate 20-24 hours. If no color change, incubate another 24 hours to confirm negative result.

31-34°C: Incubate 24-30 hours. If no color change, incubate another 24 hours to confirm negative result.

25-30°C: Incubate 40-48 hours. If no color change, incubate another 24 hours to confirm negative result.

Below 25°C: Incubate in a portable incubator 35-37°C for 24 hours, or put in or near another heat source for up to 48 hours depending on the temperature

### 5. Score and record P/A test results

- Yellow/golden brown indicates negative (absence) for H<sub>2</sub>S
- Black/gray indicates positive (presence) for H<sub>2</sub>S
- Black (positive) presence of H<sub>2</sub>S can look fuzzy. Dirt particles and debris in sample will have sharper edges and look like specs.
- If only dark particles or debris are found in sample, it is negative for H<sub>2</sub>S.
- Record test results.

### 8. Decontaminate sample

- Add 4 mL of liquid bleach (NaOCl) or sufficient chlorine tablets (calcium hypochlorite or sodium dichloroisocyanurate) to Thio-Bag to provide about 200 milligrams of free chlorine.
- After 30 minutes, pour contents into a sink, toilet or hole in ground and safely dispose the empty Thio-Bag.