Legionella Detection Test Kits

hydrosense
the world’s fastest legionella test

Tel: (866) 433-6682
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Legionella Test Kits

- Immunochromatographic Assay
  - Detects *Legionella pneumophila* serogroup 1
  - Early/Rapid indication test

- 25 minute Reaction Time

- Easy and Accurate!

- It is now possible to:
  - make decisions quickly and react quickly
  - Reduce risk to staff and public.
  - Maximize equipment uptime.
  - Minimize downtime
  - Reduce economic impacts.

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Legionella Test Kits

Applications

- Source Detection
- Testing effectiveness of remedial actions
- Does not replace a lab culture test
**Legionella Test Kits**

**Different from Lab Culture Tests**

- Detects *Legionella pneumophila* serogroup 1
  - Lp sg1 is the causative agent in the vast majority of Legionnaires' disease cases; other sg's rarely cause infection outside hospitals – and almost never cause outbreaks. **Positive Lp sg1 results are a significant risk that demands a quick response.**

- Can detect both dead and living cells
  - Traditional methods only detect cells which are still alive at the sample point and survive transportation. Even then, not all viable cells will grow under artificial laboratory conditions (Viable but non culturable cells). **Positive results indicate that is growing somewhere in the system.**

- Field test not a laboratory test.
  - The flexibility of being able to perform the test virtually anywhere avoids transportation costs. Whilst laboratory test enable 3rd party accreditation – **the field test enables you to take action now.**

- Culture provides a 'quantitative' result
  - Since there is no agreed “safe” level of *Legionella*, all 'positives' generally result in the same action. **Any positive needs corrective action.**

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**How it Works**

- **Sample Pad**
- **Conjugate Pad**
- **Test & Control Antibodies**
- **Absorbent Pad**
Legionella Test Kits

How it Works

sample pad

Containing dried ‘buffers’ and ‘conditioning agents’ to enable a wide range of samples to be examined with a single test.
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**How it Works**

Conjugate pad

Anti-\( \text{L. pneumophila} \) antibodies conjugated to gold nanoparticles (red colored)
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**How it Works**

- **Test antibody**
- **Anti- \( L.\) pneumophila sg1 antibody bound to test strip**
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How it Works

control antibody

Irrelevant control antibody bound to test strip
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How it Works

Flow by capillary action driven by:

absorbent pad
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How it Works

100 µL sample added using ‘exact’ volume pipette provided
**Legionella Test Kits**

**How it Works**

Sample starts to flow along test. Colored antibody conjugate binds to Legionella antigen in sample.
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How it Works
Legionella Test Kits

How it Works

...and the test and control lines ‘develop’...
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How it Works

...the background clears and...
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How it Works

...after 25 minutes the test reveals either:
2 - red lines - A POSITIVE RESULT   OR
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How it Works
Legionella Test Kits

5 Different Testing Options

- 5 Different Test Kit Options
  - Single Test Kit
  - Field Test Kit
  - Systems Test Kit
  - Swab Test Kit
  - Enterprise Test Kit
Legionella Test Kits

Field Test Kit

• Most Basic of all test kits
  • No Recovery Buffer
  • No Sample prep

• Sample Type: water from any source

• Sample Volume: 0.1 ml

• Sensitivity: 100,000 CFU/L

• Pack Size: 10 Tests
Legionella Test Kits

Swab Test Kit

- For Detecting Legionella in Biofilms
  - Surface of water tanks
  - Shower heads
  - Air conditioning units

- Sample Type: surface areas

- Sample Volume: N/A

- Sensitivity: 200 CFU per swabbed area

- Pack Size: 5 Tests
Legionella Test Kits

Systems Test Kit

- **Most Sensitive of all tests**
- **Sample Type:** water sample obtained by connection to pipe fitting
  - Plumbing Systems
  - Cooling Systems
- **Sample Volume:** 250 ml
- **Sensitivity:** 100 CFU/L
- **Pack Size:** 5 Tests
Legionella Test Kits

Single Test Kit

- Most Sensitive of all tests
- **Sample Type:** water collected from any source
- Requires manual filtration
- **Sample Volume:** 250 ml
- **Sensitivity:** 100 CFU/L
- **Pack Size:** 1 Tests
**Legionella Test Kits**

Enterprise Test Kit

- **Combination of System & Swab Test Kits**

- **Sample Type:**
  - Water from any source
  - Surface swab

- **Pack Size:** 2 of each test type
Legionella Test Kits

Validation


Key Findings:

• Diagnostic sensitivity 80% - similar to other legionella tests in water / human samples

• Detects all 10 subtypes of Legionella pneumophilla serogroup 1

• No cross reactivity with other common water borne bacteria (at typical concentrations)

• Robust – to typical chemical, pH, biocide and temperatures found in water systems
**Legionella Test Kits**

Comparison Data

- hydrosense Vs QPCR
- NEN 6265 Culture
- Modified NEN 6265 Culture
- hydrosense test
- Applied Biosystems PCR
- Genesystems PCR
- NEN QPCR method

Legend:
- Accuracy
- Specificity
- Sensitivity