



Performance Characteristics

Production lots of LeadCheck Aqua were used to determine the characteristics of the test system. Additional production lots of LeadCheck Aqua were tested as they were manufactured and evaluated against the standard criteria developed.

A. Sensitivity (Limits of Detection)

The sensitivity (limits of detection) of the LeadCheck Aqua test system was evaluated and compared to the Atomic Absorption Spectroscopy (AAS). AAS testing followed EPA protocols on a Perkin-Elmer 3100 AAS with a graphite furnace.

1. Method

Samples were drawn from different water sources and used to evaluate the performance of LeadCheck Aqua. Waters were selected to represent a cross section of typical source types (e.g. well water, spring water, tap water). Each water type was "spiked with from ten (10) to thirty-two (32) ppb lead, using lead atomic absorption standard (PbNO₃). The spiked samples were tested using LeadCheck Aqua. Results were compared to the AAS analysis of the samples.

2. Results of a Typical Curve (see graph)

Pb Concentration (ppb)	<u>Color Observed</u>	<u>Rating</u>
32.1	Bright pink	++++
28.3	Bright pink	++++
25.0	Pink	+++
20.5	Light pink	++
17.8	Light pink	++
15.4	Pale pink	+
14.8	Very pale pink	+/-
11.2	Pale yellow	-
0.0	Pale yellow	-

LeadCheck Aqua is a yes or no test for lead in tap water. LeadCheck Aqua clearly indicates the presence of lead in waters from all source types at 15ppb and above. Within each sample group tested, color intensity increases with lead concentration.

3. Conclusion

LeadCheck Aqua detects the presence of lead at 15 ppb under the conditions defined by the product.

B. Specificity

1. Method

A standard solution of lead in nitric acid, 1010 micrograms per ml, was added to water containing a variety of commonly occurring heavy metals, e.g., calcium, iron, copper and zinc. The spiked samples were tested using LeadCheck Aqua. Results were compared to the AAS analysis of the same samples.

2. Results

- a. The LeadCheck Aqua system is highly specific for lead.
- b. In the presence of lead at 15 ppb and above, the characteristic color of lead is seen in the presence of
 - Calcium
 - Iron (at normally occurring levels)
 - Copper
 - Zinc

Any metals naturally occurring in tap waters at allowed concentrations will not interfere with the detection of lead.

C. Interferences

High iron content and some residues soluble in the organic phase can coat the test strip with dark deposits that can mask the characteristic pink color development associated with lead.

D. Patents

The LeadCheck Aqua system is protected by a U.S. patent and other U.S. and foreign patents are pending.

For additional information, call Technical Support at 1-800-262-5323.