

Cadmium Ions (Cd+2) Rapid Test Strips (Water) (DTS801L)

This product is for research use only and is not intended for diagnostic use.

PRODUCT INFORMATION

Size 50T

Intended Use

The test strips is intended for rapid test of cadmium ions (Cd+2) in drink water. It can help the inspection department to conduct rapid on-site testing.

General Description

Since the discovery of cadmium in the early 20th century, cadmium production has increased year by year. A considerable amount of cadmium is discharged into the environment through exhaust gas, waste water, and waste residues, and the water pollution caused by cadmium ions has caused great harm to human health. Cadmium occurs naturally in zinc, in lead and copper ores, in coal and other fossil fuels, in shales and is released during volcanic action. These deposits can serve as sources to ground and surface waters, especially when in contact with low total dissolved solids (TDS) and acidic waters. In industry, cadmium is mainly used for electroplating of steel, iron, copper, brass and other metals due to its strong corrosion resistance to alkaline substances. In addition, cadmium is also the main material for manufacturing batteries. Cadmium is found in drinking water supplies as a result of deterioration of galvanized plumbing, along with industrial waste contamination, or surface water contamination by certain fertilizers. Drinking water with high cadmium ions for a long time, cadmium ions will be deposited in the human bones, hinder the body's absorption of calcium, resulting in a large loss of calcium ions in the body, causing osteoporosis, fractures, bone pain, serious or even cause cancer. Chronic cadmium poisoning mainly affects the kidney, the most typical ion is the famous public disease in Japan-Itai-Itai Disease. Therefore, many countries regulate the concentration of cadmium ions in drinking water. The US EPA has established a Maximum Contaminant Level (MCL) of 0.005 milligrams per liter (mg/L) for cadmium in drinking water. WHO established a guideline of 0.003 mg/L for life time consumption.

Principles of Testing

This test strip is based on the principle of immunochromatographic competition. The anti-Cd+2-EDTA monoclonal antibody-colloidal gold complex is coated on a colloidal gold binding pad to bind cadmium ions in the sample. The synthetic Cd-iEDTA-BSA detection antigen was coated on the surface of the nitrocellulose film as the detection line (T line), and the goat anti-mouse IgG antibody was coated on the nitrocellulose film as the quality control line (C line). After 3 to 5 minutes, the test results are displayed visually according to the color.

Reagents And Materials Provided

1. EDTA (0.1 mM): 1 vial
2. Sample Diluent: 1 vial
3. Cadmium Test Strip: 50 tests/bottle
4. Instruction

Materials Required But Not Supplied

1. Pipette (20-200 μ L, 100-1000 μ L, 1-10mL)
2. Consumables: gun tip, disposable gloves, centrifuge tube

Storage

The test strips and microwells should be stored in a cool and dry place at 2-8 °C, avoiding freezing.

Specimen Collection And Preparation

1. Take 900 μ L water into a 5 mL polystyrene centrifuge tube, add EDTA solution to it at a ratio of 9: 1, for example, 900 μ L water sample + 100 μ L EDTA solution, mix thoroughly and use for detection.

Notes: If the concentration of cadmium ion in the sample is too high, add an appropriate amount of sample diluent for dilution. Sample diluent can also be used as negative controls.

Assay Procedure

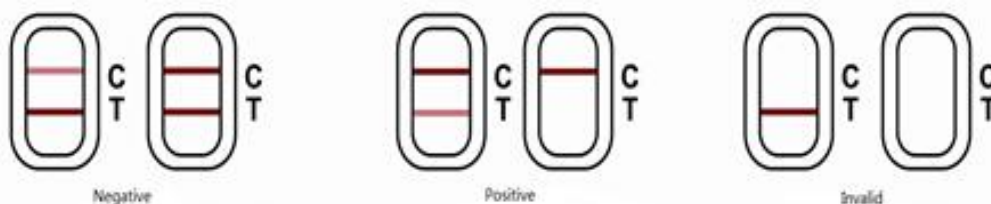
1. Take the test card from the original package, and use within 1 hour.
2. Vertically drop 100 μ L of prepared sample solution into colloidal gold binding pad.
3. Start the timer as the added solution flows, react for 10 min, and determine the result according to "Interpretation of Results".

Interpretation Of Results

Negative (-): Color of Test Line(Line T) is deeper than Control Line(Line C) or the same color, indicating that the content of cadmium in sample is lower than the LOD of the kit.

Positive (+): No color shows in Test line(Line T) or Color of Test Line(Line T) is lighter than Control Line(Line C) indicating that the cadmium in sample is higher than the LOD of the kit.

Invalid: No color shows in Control Line(Line C), indicating the operation is incorrect or the test kit is out of date. In this case, please read the instruction again carefully, and repeat the assay with a new test strip.



Detection Limit

The minimum detection limit of test strips for cadmium ions is 20 ng/mL.

Specificity

The test strip was used to detect different heavy metal-EDTA chelates. The results showed that the test strip tested positive for Cd²⁺-EDTA standard and other metal ions, except for Hg²⁺-EDTA at the concentration of 400 μ g/L, all were negative.

Precautions

1. Please test according to the assay steps. Don't touch the white membrane surface in the center of the test card. Avoid the sunlight when testing.
2. The card is one-off, Please don't use it for twice time.

3. The solution of different batches should not be mixed.
 4. Using the gloves when test.
 5. The test result is only for reference. Please confirm according to the relative standard methods of country.
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