Deposits Test Kit TK8004-Z

PART A: Metal and Carbonate Test

KIT COMPONENTS FOR PART A:

HA6350-A	Hydrochloric Acid, 50%, 30 mL
CP-0020-DR	Dropper, 0.5 - 1.0 mL
14-375-20	Spoonulet
BK-5050-G	Beaker, 50 mL

ATTENTION: As necessary, calibrate this kit against a known standard made with plant / make-up water. Be sure to collect a representative sample.

INTERFERENCES: No known interferences.

SAFETY TIPS:


Wear Gloves


Use Eye Protection

Read SDS

TESTING TIPS:


Collect Accurate Sample


Hold Bottles Vertically


Ensure Proper Lighting

SAMPLE PREPARATIONS: Collect a fresh scale sample by scraping or chipping scale from the test specimen using the spoonulet or a screwdriver. Crush the scale sample into pieces or place into a mortar and grind, if necessary. Use Whirl-Pak sample bag (SB-4550-EA) to collect more sample if further testing is needed.

PART A: Metal and Carbonate Test

TK8004-Z

1 Clean the beaker with Deionized Water and use a paper towel to dry it. Using the spoonulet, **collect a deposit sample of 0.5 - 1 gram** and place in the beaker.

STEP 1

2 Using the 0.5 - 1 mL dropper, **add 0.5 mL of Hydrochloric Acid 50%** (HA6350) on the deposit sample. Place the beaker on a piece of white card stock to acquire a better view of the results.

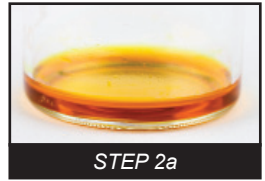
2a **If a yellow color develops,** Iron is present.

2b **If a green color develops,** Copper is present.

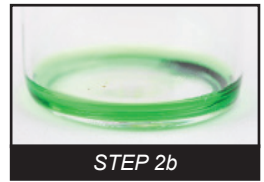
(If both Iron and Copper are present, the color will be a mixture of yellow and green, depending on the relative amount of the two metals. Perform Part C: Iron Test to confirm the presence of Iron.)

2c **Bubbles and fizzing** indicate the presence of carbonate.

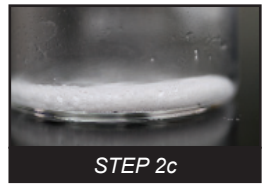
Note: If a large amount of the sample is dissolved during this step, the sample may be a high carbonate based scale.



STEP 2a



STEP 2b



STEP 2c

Deposits Test Kit
PART B: Hardness Test

TK8004-Z

KIT COMPONENTS FOR PART B:

DW4000-B	Deionized Water, 60 mL
EB1775-A	Total Hardness Reagent, 30 mL
14-375-20	Spoonulet
BK-5050-G	Beaker, 50 mL

ATTENTION: As necessary, calibrate this kit against a known standard made with plant / make-up water. Be sure to collect a representative sample.

INTERFERENCES: Metal ions such as aluminum, cobalt, copper, iron and nickel can poison the hardness indicator. In high concentrations they can produce off or indistinct colors. Magnetite may produce yellowish color.

SAFETY TIPS:


Wear Gloves


Use Eye Protection

Read SDS

TESTING TIPS:


Collect Accurate Sample


Hold Bottles Vertically


Ensure Proper Lighting

SAMPLE PREPARATIONS: Collect a fresh scale sample by scraping or chipping scale from the test specimen using the spoonulet or a screwdriver. Crush the scale sample into pieces or place into a mortar and grind, if necessary. Use Whirl-Pak sample bag (SB-4550-EA) to collect more sample if further testing is needed.

PART B: Hardness Test

TK8004-Z

1 Clean the beaker with Deionized Water and use a paper towel to dry it. Using the spoonulet, **collect a deposit sample of 0.5 - 1 gram** and place in the beaker.

STEP 1

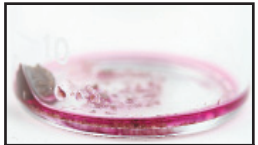
2a **If a blue color develops,** no hardness or metals are present.

STEP 2a

2 **Add 5 drops of Deionized Water** (DW4000) and **5 drops of Total Hardness Reagent** (EB1775) onto the deposit sample. Place the beaker on a piece of white card stock to acquire a better view of the results.

2b **If a purple or red color develops,** hardness or metals are present.

Note: Refer to the results of Part A, 2c and Part B, 2b. Positive carbonate test and positive hardness test indicate the scale contains calcium carbonate.



STEP 2b

Deposits Test Kit
PART C: Iron Test

TK8004-Z

KIT COMPONENTS FOR PART C:

FE3108-AA	Iron Reagent #1, 15 mL
FE3109-AA	Iron Reagent #2, 15 mL
MG-5018-P	Magnet
14-375-20	Spoonulet
BK-5050-G	Beaker, 50 mL

ATTENTION: As necessary, calibrate this kit against a known standard made with plant / make-up water. Be sure to collect a representative sample.

INTERFERENCES: No known interferences.

SAFETY TIPS:


Wear Gloves


Use Eye Protection

Read SDS

TESTING TIPS:


Collect Accurate Sample


Hold Bottles Vertically


Ensure Proper Lighting

SAMPLE PREPARATIONS: Collect a fresh scale sample by scraping or chipping scale from the test specimen using the spoonulet or a screwdriver. Crush the scale sample into pieces or place into a mortar and grind, if necessary. Use Whirl-Pak sample bag (SB-4550-EA) to collect more sample if further testing is needed.

PART C: Iron Test

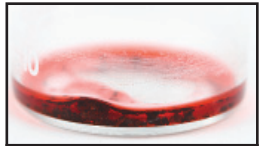
TK8004-Z

1 Clean the beaker with Deionized Water and use a paper towel to dry it. Using the spoonulet, **collect a deposit sample of 0.5 - 1 gram** and place in the beaker.

STEP 1

2 Place the magnet under the beaker and move it around. If the sample follows the magnet, active magnetic Iron Oxide (Magnetite) is present. Amount of moving particles may indicate approximately the percentage of magnetite in the sample.

3 **Add 5 drops of Iron Reagent #1** (FE3108) and **5 drops of Iron Reagent #2** (FE3109) to the deposit sample. Place the beaker on a piece of white card stock to acquire a better view of the results.



STEP 3

If Iron is present, a red color will develop. The darker the red color the more Iron in the sample.

Deposits Test Kit
PART D: Phosphate Test

TK8004-Z

KIT COMPONENTS FOR PART D:

NA7030-A	Nitric Acid, 0.2N, 30 mL
MO1460-A	Molybdate Reagent, 30 mL
SC7555-H	Stannous Chloride Powder, 10 g
14-375-20	Spoonulet
BK-5050-G	Beaker, 50 mL

ATTENTION: As necessary, calibrate this kit against a known standard made with plant / make-up water. Be sure to collect a representative sample.

INTERFERENCES: No known interferences.

SAFETY TIPS:


Wear Gloves


Use Eye Protection

Read SDS

TESTING TIPS:


Collect Accurate Sample


Hold Bottles Vertically


Ensure Proper Lighting

SAMPLE PREPARATIONS: Collect a fresh scale sample by scraping or chipping scale from the test specimen using the spoonulet or a screwdriver. Crush the scale sample into pieces or place into a mortar and grind, if necessary. Use Whirl-Pak sample bag (SB-4550-EA) to collect more sample if further testing is needed.

PART D: Phosphate Test

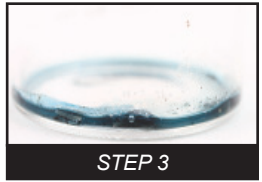
TK8004-Z

1 Clean the beaker with Deionized Water and use a paper towel to dry it. Using the spoonulet, **collect a deposit sample of 0.5 - 1 gram** and place in the beaker.

STEP 1

2 **Add 5-7 drops of Nitric Acid, 0.2N** (NA7030) to the deposit sample.

3 **Add 10 drops of Molybdate Reagent** (MO1460) and **1 scoop of Stannous Chloride Powder** (SC7555) to the deposit sample. Place the beaker on a piece of white card stock to acquire a better view of the results.



STEP 3

A blue color indicates the presence of phosphate. This suggests phosphate sludge.

Deposits Test Kit TK8004-Z

PART E: Sulfate and Sulfite Test

KIT COMPONENTS FOR PART E:

HA6141-A	Hydrochloric Acid 1.0N, 30 mL
CP-0020-DR	Dropper, 0.5 – 1.0 mL
14-375-20	Spoonulet
BK-5050-G	Beaker, 50 mL

ATTENTION: As necessary, calibrate this kit against a known standard made with plant / make-up water. Be sure to collect a representative sample.

INTERFERENCES: No known interferences.

SAFETY TIPS:


Wear Gloves


Use Eye Protection

Read SDS

TESTING TIPS:


Collect Accurate Sample


Hold Bottles Vertically


Ensure Proper Lighting

SAMPLE PREPARATIONS: Collect a fresh scale sample by scraping or chipping scale from the test specimen using the spoonulet or a screwdriver. Crush the scale sample into pieces or place into a mortar and grind, if necessary. Use Whirl-Pak sample bag (SB-4550-EA) to collect more sample if further testing is needed.

PART E: Sulfate and Sulfite Test

TK8004-Z

1 Clean the beaker with Deionized Water and use a paper towel to dry it. Using the spoonulet, **collect a deposit sample of 0.5 - 1 gram** and place in the beaker. Note the color of the sample for Step 4.

STEP 1

2 **Add 5-7 drops of Hydrochloric Acid 1.0N** (HA6141) to the deposit sample.

3 If a rotten egg odor is noticed, sulfates and/or sulfides are present.

4 Observing the positive sample odor and the color:

4a If the sample was white before adding Hydrochloric Acid 1.0N (HA6141), Calcium Sulfate is probably present.

4b If the sample was black, Iron Sulfite is probably present.

Deposits Test Kit
PART F: Silicate Test

TK8004-Z

KIT COMPONENTS FOR PART F:

HA6350-A	Hydrochloric Acid, 50%, 30 mL
CP-0020-DR	Dropper, 0.5 - 1.0 mL
14-375-20	Spoonulet
BK-5050-G	Beaker, 50 mL

ATTENTION: As necessary, calibrate this kit against a known standard made with plant / make-up water. Be sure to collect a representative sample.

INTERFERENCES: No known interferences.

SAFETY TIPS:


Wear Gloves


Use Eye Protection

Read SDS

TESTING TIPS:


Collect Accurate Sample


Hold Bottles Vertically


Ensure Proper Lighting

SAMPLE PREPARATIONS: Collect a fresh scale sample by scraping or chipping scale from the test specimen using the spoonulet or a screwdriver. Crush the scale sample into pieces or place into a mortar and grind, if necessary. Use Whirl-Pak sample bag (SB-4550-EA) to collect more sample if further testing is needed.

PART F: Silicate Test

TK8004-Z

1 Clean the beaker with Deionized Water and use a paper towel to dry it. Using the spoonulet, **collect about 1 gram of the deposit sample** and place in the beaker.

STEP 1

2 Using the 0.5 - 1 mL dropper, **add 2.0 mL of Hydrochloric Acid 50%** (HA6350) to the deposit sample and wait a few hours for the reaction to take place (no more than 5 hours).

3 After the appropriate amount of time has passed, observe one of the following:

3a If over 75% of the deposit sample dissolves, filter the liquid and dilute 100 times with deionized water quantitatively. Test this solution for **Hardness, Iron, Phosphate, Sulfate and Copper** as stated in these instructions.

3b If a large portion of the deposit sample does not dissolve, then silicate complexes are present and a detailed lab analysis is needed.