Chloride LMP Test Kit
Medium Range of 20 to 100 ppm

TK1405-Z
red caps

KIT COMPONENTS:

NA7065-A	Nitric Acid 20%, 30 mL
SN3260-B	Chloride Bonding Reagent #2, 50 mL
FE4000-20G	Titration Indicator Powder, 20 g
PT4505-B	Titrant Reagent #2, 60 mL
HP1003-B	Hydrogen Peroxide 3%, 60 mL
SY-2001-P	Syringe, 1 mL
VL-0525-V	Vial, 5-25 mL
OR-10200-P	Orifice Reducer, 20 mm

SAFETY TIPS:


Wear Gloves


Use Eye Protection

Read SDS

TESTING TIPS:


Collect Accurate Sample


Hold Bottles Vertically


Ensure Proper Lighting

INTERFERENCES: If the sample is colored, it may change the appearance of the ending point color. Filtering before the test will ensure the best results. Sulfite, Cyanide, Bromide and Iodide interfere directly and create a positive interference. Sulfite can be eliminated with Hydrogen Peroxide 3% before testing.

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

EndPoint ID® Test Procedure

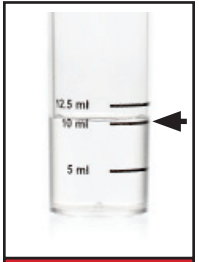
Chloride LMP (Medium Range) Test Kit — TK1405-Z

1 Rinse vial three times with sample to be tested. **Fill vial to 10 mL mark.**

2 If sulfites are present, **add 6 drops of Hydrogen Peroxide 3%** (HP1003). Swirl for 30 seconds.

3 **Add 8 drops of Nitric Acid 20%** (NA7065) and swirl to mix.

4 Put the orifice reducer into **Chloride Bonding Reagent #2** (SN3260) bottle, and then insert the syringe through the orifice. Hold the bottle upside down and plunge a few times to remove air bubbles from the syringe before taking 1.0 mL of the reagent. **Add 1.0 mL of the reagent** and swirl to mix. The solution will become cloudy if chloride is present. Cap may be placed back on the bottle with the orifice reducer in place.



STEP 1


STEP 4

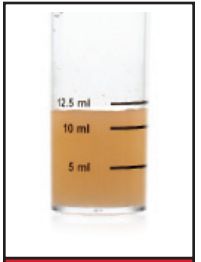
5 **Add 3 scoops of Titration Indicator Powder** (FE4000) and swirl to mix for about 30 seconds. The liquid will turn slightly yellow.

6 **Add Titrant Reagent #2** (PT4505) one drop at a time while swirling. Count the number of drops until the sample color turns to brick red or orange red.

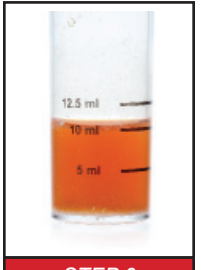
If the sample turns orange red at the first drop of titrant, proceed to the following High Range Chloride test procedure.

Calculate the chloride concentration or refer to the concentration Table 2.

150 - (# drops x 10) = ppm as Chloride



STEP 5



STEP 6

Table 2: Relationship of chloride concentration and number of testing drops

Number of Drops	Cl^- concentration ppm	Number of Drops	Cl^- concentration ppm
2	130	9	60
3	120	10	50
4	110	11	40
5	100	12	30
6	90	13	20
7	80	14	10
8	70		

Chloride LMP Test Kit
High Range of 100 to 400 ppm

TK1405-Z
red caps

KIT COMPONENTS:

NA7065-A	Nitric Acid 20%, 30 mL
SN3270-B	Chloride Bonding Reagent #3, 50 mL
FE4000-20G	Titration Indicator Powder, 20 g
PT4510-B	Titrant Reagent #3, 60 mL
HP1003-B	Hydrogen Peroxide 3%, 60 mL
SY-2001-P	Syringe, 1 mL
VL-0525-V	Vial, 5-25 mL
OR-10200-P	Orifice Reducer, 20 mm

SAFETY TIPS:


Wear Gloves


Use Eye Protection

Read SDS

TESTING TIPS:


Collect Accurate Sample


Hold Bottles Vertically


Ensure Proper Lighting

INTERFERENCES: If the sample is colored, it may change the appearance of the ending point color. Filtering before the test will ensure the best results. Sulfite, Cyanide, Bromide and Iodide interfere directly and create a positive interference. Sulfite can be eliminated with Hydrogen Peroxide 3% before testing.

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

EndPoint ID® Test Procedure

Chloride LMP (High Range) Test Kit — TK1405-Z

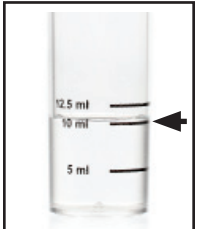
1 Rinse vial three times with sample to be tested. **Fill vial to 10 mL mark.**

2 If sulfites are present, **add 6 drops of Hydrogen Peroxide 3%** (HP1003). Swirl for 30 seconds.

3 **Add 8 drops of Nitric Acid 20%** (NA7065) and swirl to mix.

4 Put the orifice reducer into **Chloride Bonding Reagent #3** (SN3270) bottle, and then insert the syringe through the orifice. Hold the bottle upside down and plunge a few times to remove air bubbles from the syringe before taking 1.0 mL of the reagent. **Add 1.0 mL of the reagent** and swirl to mix. The solution will become cloudy if chloride is present. Cap may be placed back on the bottle with the orifice reducer in place.

5 **Add 3 scoops of Titration Indicator Powder** (FE4000) and swirl to mix for about 30 seconds. The liquid will turn slightly yellow.



STEP 1

STEP 4

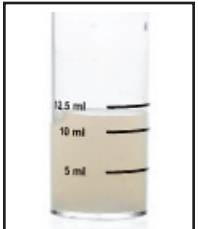
6 **Add Titrant Reagent #3** (PT4510) one drop at a time while swirling. Count the number of drops until the sample color turns brick red or orange red. ***If sample turns orange red at first drop of titrant, see note below***

Calculate the chloride concentration or refer to the concentration table 3.

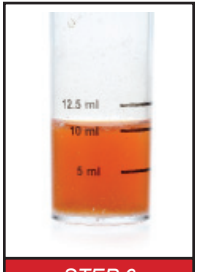
500 - (# drops x 20) = ppm as Chloride

***Note** If the sample turns orange red after the first drop of the titrant, repeat step 4, adding another 1 mL of Chloride Bonding Reagent #3 (SN3270). If the solution remains orange red, add an additional 1 mL. (This can be done continuously until the orange red disappears.) Then continue with Step 6. Count all drops in the end total number of drops. The calculation would now be:*

(500 x N) – (# drops X 20) = ppm Chloride, in which N = total number of 1 mL of Chloride Bonding Reagent #3 added.



STEP 5



STEP 6

Table 3: Relationship of chloride concentration and number of testing drops

Number of Drops	Cl^- concentration ppm	Number of Drops	Cl^- concentration ppm
2	460	11	280
3	440	12	260
4	420	13	240
5	400	14	220
6	380	15	200
7	360	16	180
8	340	17	160
9	320	18	140
10	300	19	120