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# CHLORIDE

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This test method can be used for kits MND2190

The following method covers Chloride as  $\text{Cl}^-$

**Test Range: 20 – 20,000 mg/l**

For optimal test conditions; ensure that the sample pH range is between pH 4.0 to 8.3

**pH Adjustment:**

Take 50 ml of the test sample, into Red Capped Tube, add 2 drops of PA1, cap and mix gently. If PINK colour appears, add QA2 dropwise mixing after each addition until the PINK colour is discharged.

**Method 1: For Chloride Concentration less than 400 mg/l  $\text{Cl}^-$  - use Table 1**

Proceed to step 1.

**Table 1**

Expected Range (ppm)	Sample Size	Titrant	Factor
100 – 400	10 ml	CC2	10
50 - 150	20 ml	CC2	5
20 - 75	40 ml	CC2	2.5

1. Using provide syringe, transfer the required aliquot of neat sample to the test jar.
2. Sample volume for expected test range as outlined in the table below.
3. If sample taken is less than 10 ml add distilled water to 40 ml volume to assist mixing.
4. Add 10 drops of reagent CC1 or BC1 and swirl jar to mix.
5. Add CC2 one drop at a time, mixing between each addition until sample colour changes from yellow to orange/brown.
6. Count number of CC2 drops are required to achieve the yellow to orange/brown colour change.

Note: When using CC2, hold dropper the bottle vertically upside down, allowing the drops to form slowly and drop off under their own weight. DO NOT SHAKE DROPS OFF.

**Method 2: For Chloride Concentration greater than 400 mg/l Cl<sup>-</sup> - use Table 2**

Proceed to step 7.

**Table 2**

Expected Range (ppm)	Sample Size	Titration	Factor
4000 - 20,000	1 ml	BC2	400
2000 - 6000	2 ml	BC2	200
800 - 3000	5 ml	BC2	80
400 - 1000	10 ml	BC2	40

7. Using provide syringe, transfer the required aliquot of neat sample to the test jar.
8. Sample volume for expected test range as outlined in the table 1 below.
9. If sample taken is less than 10 ml add distilled water to 40 ml volume to assist mixing.
10. Add 10 drops of reagent CC1 or BC1 and swirl jar to mix.
11. Add BC2 one drop at a time, mixing between each addition until sample colour changes from yellow to orange/brown.
12. Count number of BC2 drops are required to achieve the yellow to orange/brown colour change.

$$\text{Chloride as mg/L Cl}^{-} = \text{No. of drops BC2 used} \times F$$

**To convert mg/L Cl<sup>-</sup> to mg/L NaCl multiply by 1.6**

Note: When using BC2, hold dropper the bottle vertically upside down, allowing the drops to form slowly and drop off under their own weight. DO NOT SHAKE DROPS OFF.

## **Replacement Reagents and Equipment**

Description	Pk Size	Re-order code
BC1 Chloride Indicator	65 ml	RD1301
CC1 Chloride Indicator	65 mL	RD1303
BC2 Chloride HR Titrant	65 ml	RD1302
CC2 Chloride LR Titrant	65 ml	RD1304
Reagent PA1 – optional item	65 ml	RD1203
Reagent QA2 – optional item	65 ml	RD2602
Syringe 20ml plastic	each	TDSYR20
Syringe 3 ml plastic	each	TDSYR3
Tube V-Bottom + Red Cap 50 mL	each	WA6255
Bottle Square Plastic 60 mL	each	NAL2015-0060

## **Health and Safety**

Use splash proof eye wear and nitrile or neoprene protective gloves when handling the products.  
Note the H & P phrases printed on the reagent bottles.

### CC1 / BC1:

May cause an allergic skin reaction. May cause genetic defects. May cause cancer. May cause damage to organs blood, kidneys & liver through prolonged or repeat exposure. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. In case of skin or eye contact wash with plenty of water for at least 10 minutes. If exposed or concerned: Get prompt medical attention. Take off contaminated clothing and launder before reuse.

### BC2

### CC2:

May cause transient skin and eye irritation. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. In case of skin or eye contact wash with plenty of water for at least 10 minutes. If discomfort persists, get prompt medical attention.

### PA1:

Not considered hazardous, avoid contact with skin and eyes. Wash off any accidental contact with plenty of cold running water. Do not ingest. If symptoms develop or discomfort persists, obtain prompt medical attention.

### QA2:

Causes skin irritation. Causes serious eye irritation. Wear protective gloves/protective clothing/eye protection/face protection. Wash exposed skin thoroughly after handling. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If on skin: Wash with plenty of water. If symptoms of irritation occur or persists, get prompt medical attention.