

Single Parameter Chemical Test Kits

## Chloride

### HI 3815 Chloride Test Kit

The HANNA chloride test kit is quick, easy to use and portable. The design makes the kit easy to handle and, except for mercuric nitrate solution, practically prevents accidental injury or damage due to spills. The pH is lowered to approximately 3 by addition of nitric acid. Mercuric ions react with chloride ions to form mercuric chloride; when excess mercuric ions is present, it complexes with diphenylcarbazone to form a purple solution. The color change from yellow to purple determines the end point of this titration.

### HI 38015 Chloride, Extended Range Test Kit

The HANNA extended range chloride test kit is equipped with all you need to determine high chloride levels of water. The chloride level in mg/L (ppm) is determined by a silver nitrate titration, using potassium chromate as indicator. The color change from yellow to brick-red determines the end point of this titration.



HI 3815 Chloride

**Chloride** ions are one of the major inorganic anions in water and wastewater.

### Effects on humans

A normal adult human body contains approximately 81.7 g chloride. On the basis of a total obligatory loss of chloride of approximately 530 mg/day, a dietary intake of 9 mg of chloride per kg of body weight for adults has been recommended (equivalent to slightly more than 1 g of table salt per person per day).

Chloride toxicity has not been observed in humans except in the special case of impaired sodium chloride metabolism, e.g. in congestive heart failure. Healthy individuals can tolerate the intake of large quantities of chloride provided that there is a accompanying intake of fresh water. Little is known about the effect of prolonged intake of large amounts of chloride in the diet. As shown with experimental animals, hypertension associated with sodium chloride intake appears to be related to the sodium rather than the chloride ion.

### Other considerations

Chloride increases the electrical conductivity of water and thus increases its corrosivity. In metal pipes, chloride reacts with metal ions to form soluble salts, thus increasing levels of metals in drinking-water. In lead pipes, a protective oxide layer is built up, but chloride enhances galvanic corrosion. It can also increase the rate of pitting corrosion of metal pipes.

Chloride concentrations in excess of about 250 mg/L can be detected by taste in water, but the threshold depends upon the associated cations. Consumers can, however, become accustomed to concentrations in excess of 250 mg/L.

### ORDERING INFORMATION

**HI 3815** test kit comes with 15 mL diphenylcarbazone indicator, 30 mL nitric acid solution, 120 mL mercuric nitrate solution, 50 mL calibrated vessel, 10 mL calibrated vessel, calibrated syringe with tip.

**HI 38015** test kit comes with 100 mL chloride reagent A, 25 mL chloride reagent B (2), 100 mL chloride reagent C, demineralizer bottle with filter cap for 12 L, 50 mL calibrated plastic vessel with cap, 3 mL plastic pipette, 1 mL plastic pipette, 1 mL syringes with tips (2) and brush.

### ACCESSORIES

#### HI 3815

HI 3815-100 Spare reagent for 100 tests

#### HI 38015

HI 3815-100 Spare reagent for 100 tests

METHOD	RANGE	SMALLEST INCREMENT	CHEMICAL METHOD	# TESTS	WEIGHT
<b>HI 3815 Chloride (as Cl<sup>-</sup>)</b>					
titration	0-100 mg/L (ppm) 0-1000 mg/L (ppm)	1 mg/L (ppm) 10 mg/L (ppm)	mercuric nitrate	110 avg.	460 g
<b>HI 38015 Chloride (as Cl<sup>-</sup>)</b>					
titration	500-10000 mg/L (ppm) 5000-100000 mg/L (ppm)	100 mg/L (ppm) 1000 mg/L (ppm)	silver nitrate	100	664 g

