

## Hardness Testing

Hardness is defined as the total of calcium and magnesium ions. An older definition related hardness to the ability of a water supply to precipitate soap. Indeed, early test methods used a soap solution to determine hardness. The main concern today is hardness and its relation to calcium carbonate saturation. The lead/copper rules require calcium hardness testing for just that purpose.

operator notes



## Hach Total Hardness Test Kits

- Digital titration kit makes taking measurements easy
- Hach Model HA-DT



Properly maintaining and operating boiler and cooling tower systems requires a delicate balance between water quality parameters and treatment chemicals. This digital titrator test kit offers simple, accurate and reproducible measurements for boiler and cooling tower applications.

The digital titrator is a precision dispensing device fitted with compact cartridges that contain concentrated titrants. It simplifies titration procedures, saves time and provides greater accuracy than drop count testing.

**Includes:** digital titrator, reagents for 100 tests, flask, instructions and a hard-side carrying case.



**Range:** 10 to 4000 mg/L as CaCO<sub>3</sub>

**Accuracy:** ±1% for readings over 100 digits/±1 digit under 100 digits

MFR #	DESCRIPTION	STOCK #	EACH
2063600	Hach Total Hardness Test Kit	47863	\$
<b>REPLACEMENT ITEMS &amp; ACCESSORIES</b>			
2272000	Total Hardness Reagent Set	21127	\$
42432	Hardness Buffer Solution, 100 mL	21116	
—	Erlenmeyer Flask, 250 mL	31053	
85199	ManVer 2 Powder Pillows, 50 mL, Pack of 100	30029	
1436401	TitraVer EDTA 0.0800M Cartridge	47826	
1439901	TitraVer EDTA 0.800M Cartridge	47827	
1690002	Digital Titrator Assembly	21129	
1720500	Hook Delivery Tubes, Pack of 5	21130	
2064342	Graduated Cylinder, Low Form	21131	
4660500	Carrying Case (HC-5)	21114	

## Hach Total Hardness Test Strips

Hach test strips are easy to use and easy to read. Simply dip the strip, wait until color develops and compare the color of the reacted pad to the chart printed on the container. Available in a bottle of 50 strips or in a package of 250 or 1000 individually wrapped strips.

**Range:** 0 to 425 mg/L as CaCO<sub>3</sub> (0 to 25 gpg)  
**Increments:** 0, 25, 50, 120, 250, 425 (0, 1.5, 3, 7, 15, 25 gpg)

DESCRIPTION	# TESTS	STOCK #	EACH
Total Hardness Test Strips	50	41266	\$
Total Hardness Test Strips	250	41267	
Total Hardness Test Strips	1000	41268	



**USA BlueBook** BRAND PRODUCTS

YOUR BEST VALUE!

## USA BlueBook Total Hardness Test Kits

- Simple drop-count for measurements down to trace levels

Our total hardness test kit uses a standard chelant to titrate the hardness in the sample. It's easy to read—just look for the indicator to change from red to blue.

Test instructions are printed on waterproof, chemical-resistant and tear-proof synthetic paper. Icons and pictures make the procedure easy to follow; a list of interferences increases accuracy. For extra support, scan the QR code on the instruction sheet to view an online training video.

**Includes:** reagents, sample vial, instructions and durable case.



**Range:** 0.5 to 20 mg/L; 5 to 400 mg/L  
**Resolution:** 0.5 mg/L or 10 mg/L as CaCO<sub>3</sub>

DESCRIPTION	# TESTS	STOCK #	EACH
Hardness Test Kit	60	87752	\$
<b>REPLACEMENT REAGENTS</b>			
Trace Hardness Titrant, 60 mL		87753	\$
Hardness Titrant, High, 60 mL		87754	
Hardness Buffer, 30 mL		87755	
Hardness Indicator Powder, 10 g		87756	



## LaMotte Hardness Test Kits

- For process control testing only

Water hardness is primarily caused by calcium and magnesium ions. This test kit measures total hardness as well as determining the portions contributed by calcium and magnesium.

Calcium carbonate can act as an ally in lead/copper leaching by coating the inside of pipes. Easy-to-use direct reading titrator makes measuring calcium carbonate levels simple—even in the field. Results are recorded as ppm of CaCO<sub>3</sub>. To convert from ppm to grains per gallon (gpg), multiply by 0.058. (LaMotte 4824).

The replacement reagent refill contains LaMotte's calcium hardness indicator tablets (T-5250-H, 50/vial), hardness reagent #5 (4483-E, 15-mL), hardness #6 tablets (4484-J, 100/vial), hardness reagent #7 (4487DR-H, 60-mL) and sodium hydroxide reagent with metal inhibitor (4259-E, 15-mL).

**Range:** 0 to 200 mg/L  
**Resolution:** 4 mg/L

DESCRIPTION	# TESTS	STOCK #	EACH
Hardness Test Kit	50	31580	\$
Hardness Reagent Refill	50	31590	
Replacement Test Tube	—	31582	
Replacement Direct Read Titrator	—	31432	

