## HARDNESS - HYDRAZINE

Hardness originally referred to the ability of water to lather with soap. The more calcium and magnesium ions present, the "harder" it was to produce a lather.



ORDER CODE	TEST SYSTEM		# OF TESTS	SHIPPING CODE
MODEL		RANGE/SENSITIVITY	(# REAGENTS)	(WEIGHT/LBS)

HARDNESS EDTA titration is used for all hardness determinations, with a red to blue endpoint. Both total and calcium hardness buffers include inhibitors to eliminate metal interferences. All results are as CaCO<sub>3</sub>; some kits also express results as gpg. The 3609, which is recommended for salt water analysis, includes a conversion factor for Ca<sup>++</sup>. The -U suffix indicates an all liquid kit; -LT indicates a liquid buffer and tablet indicator.

Fresh & Salt Water Calcium Hardness Direct Reading Titrator	0–200 ppm/4 ppm CaCO <sub>3</sub> 0-2,500 ppm by dilution	50 (3)	R1 (1)
Total Hardness Direct Reading Titrator	0–200 ppm/4ppm CaCO <sub>3</sub> Liquid indicator	50 at 200 ppm (3)	R1 (1)
Total Hardness Dropper Bottle	1 drop = 10 ppm or 1 gpg CaCO <sub>3</sub> Liquid indicator	50 at 200 ppm or 20 gpg (3)	R1 (1)
Total Hardness Direct Reading Titrator	0-200 ppm/4 ppm CaCO3 Tablet indicator	50 at 200 ppm (3)	R1 (1)
Calcium, Magnesium, Total Hardness Dropper Bottle	1 drop = 10 ppm or 1 gpg CaCO <sub>3</sub> Tablet indicator	50 at 200 ppm or 20 gpg (5)	R1 (1)
Calcium, Magnesium, & Total Hardness Direct Reading Titrator	0–200 ppm/4 ppm CaCO <sub>3</sub> Tablet indicator	50 at 200 ppm (5)	R1 (1)
Low Range Total Hardness Direct Reading Titrator	0–10 ppm/0.2 ppm CaCO <sub>3</sub>	50 at 10 ppm (3)	R1 (1)
Total Hardness Dropper Bottle	1 drop = 10, 25, or 50 ppm $CaCO_3$	100 (3)	R1 (1)
Total Hardness Dropper Bottle	1 drop = $2$ , $5$ , or $10$ ppm $CaCO_3$	100 (3)	R1 (1)
ellow color is formed in the	reaction of hydrazine and paradimethylaminob	enzaldehyde.	
Bi-Color Reader with Octet Comparator	0.00, 0.01, 0.05, 0.10, 0.20, 0.30, 0.40, 0.50 ppm N <sub>2</sub> H <sub>4</sub>	50 (2)	R2 (1)
	Calcium Hardness Direct Reading Titrator Total Hardness Direct Reading Titrator Total Hardness Dropper Bottle Total Hardness Direct Reading Titrator Calcium, Magnesium, Total Hardness Dropper Bottle Calcium, Magnesium, & Total Hardness Direct Reading Titrator Low Range Total Hardness Direct Reading Titrator Low Range Total Hardness Direct Reading Titrator Total Hardness Dropper Bottle Total Hardness Dropper Bottle Ellow color is formed in the Bi-Color Reader with	Calcium Hardness Direct Reading Titrator  Total Hardness Direct Reading Titrator  Total Hardness Direct Reading Titrator  Total Hardness Dropper Bottle Total Hardness Direct Reading Titrator  Total Hardness Dropper Bottle Total Hardness Direct Reading Titrator  Calcium, Magnesium, Total Hardness Dropper Bottle  Calcium, Magnesium, Total Hardness Dropper Bottle  Calcium, Magnesium, Total Hardness Direct Reading Titrator  Low Range Total Hardness Direct Reading Titrator  Low Range Total Hardness Direct Reading Titrator  Total Hardness Dropper Bottle  Total Hardness Dropper Bottle  Ellow color is formed in the reaction of hydrazine and paradimethylaminob Bi-Color Reader with  0-200 ppm/4 ppm CaCO <sub>3</sub> Tablet indicator  0-200 ppm/4 ppm CaCO <sub>3</sub> Tablet indicator  1 drop = 10 ppm CaCO <sub>3</sub> Tablet indicator  1 drop = 10 ppm CaCO <sub>3</sub> Total Hardness Direct Reading Titrator  Total Hardness Dropper Bottle  1 drop = 2, 5, or 10 ppm CaCO <sub>3</sub> Dropper Bottle	Calcium Hardness Direct Reading Titrator  Total Hardness Dropper Bottle Calcium, Magnesium, Total Hardness Dropper Bottle Calcium, Magnesium, 8 Total Hardness Dropper Bottle Calcium, Magnesium, 8 Total Hardness Dropper Bottle  Calcium, Magnesium, 8 Total Hardness Dropper Bottle  Calcium, Magnesium, 8 Total Hardness Dropper Bottle  Total Hardness Direct Reading Titrator  Total Hardness Direct Reading Titrator  Total Hardness Dropper Bottle  Total Fardness Dropper Bottle