

# Backpack Lab® Water Quality Educational Test Kit

## Backpack Lab® Water Quality Educational Test Kit Includes:

- 110 tests each for acidity and alkalinity, 100 tests for carbon dioxide, dissolved oxygen, hardness, nitrate and phosphate
- Hanna's HI98129 Combo pH/EC/TDS/temperature tester
- Secchi disk for turbidity
- Backpack carrying case which holds all components of the kit
- Teacher's manual with a curriculum that meets National Science Teachers Association Standards
- Parameter summary in PDF and PowerPoint format (on included CD)
- Laminated, laboratory instruction cards with step-by-step field test procedures
- Reproducible lab activity worksheets with instructions, goals, hypothesis, and testing procedure results/observations (on included CD)

- A glossary of key terms in PDF format (on included CD)

Hanna offers a series of test kits specifically designed for educators and environmental science students. These portable kits contain well-constructed lessons and activities, and will allow the teacher to get the most out of their classroom time.

Backpack Lab® is designed with all the necessary components in one place, reducing the chance of misplacing an item. Ideal for transporting, take this durable backpack to the field for on-site measurements.

The lesson plan and components are tied together by a comprehensive teacher's manual that includes information about each parameter, classroom activities designed to introduce students to each parameter, and detailed field-testing procedures. Hanna chemical test kits and pocket testers provide teachers with a valuable tool in helping students assess the water quality of streams, rivers and lakes.

Specifications	HI3817BP Backpack Lab® Water Quality Test Kit				
Test	Type	Range	Method	Number of Tests	Individual Kit Reorder Code
Acidity (CaCO <sub>3</sub> )	titration	0-100 mg/L (ppm) 0-500 mg/L (ppm)	methyl-orange phenolphthalein	110 avg.	HI3820
Alkalinity (CaCO <sub>3</sub> ) Phenolphthalein & Total	titration	0-100 mg/L (ppm) 0-300 mg/L (ppm)	phenolphthalein/ bromphenol blue	110 avg.	HI3811
Carbon Dioxide	titration	0.0-10.0 mg/L (ppm) 0.0-50.0 mg/L (ppm) 0-100 mg/L (ppm)	phenolphthalein	110 avg.	HI3818
Oxygen, Dissolved	titration	0.0-10.0 mg/L (ppm)	modified Winkler	110 avg.	HI3810
Hardness (CaCO <sub>3</sub> )	titration	0.0-30.0 mg/L (ppm) 0-300 mg/L (ppm)	EDTA	100 avg.	HI3812
Nitrate (NO <sub>3</sub> <sup>-</sup> -N)	colorimetric	0-50 mg/L (ppm)	cadmium reduction	100	HI3874
Phosphate	colorimetric	0-5 mg/L (ppm)	ascorbic acid	50	HI3833
Specifications	HI98129 Combo pH/EC/TDS/Temperature Tester				
Type	Range	Resolution	Accuracy	Calibration	
pH	0.00 to 14.00 pH	0.01 pH	±0.05 pH	automatic, one or two-point with two sets of standard buffers (pH 4.01 / 7.01 / 10.01 or 4.01 / 6.86 / 9.18)	
Conductivity	0 to 3999 µS/cm	1 µS/cm	±2% F.S.	automatic, one point at 1413 µS/cm	
TDS	0 to 2000 mg/L (ppm)	1 mg/L (ppm)	±2% F.S.	automatic, one point at 1382 mg/L (ppm)	
Temperature	0.0 to 60.0°C / 32.0 to 140.0°F	0.1°C / 0.1°F	±0.5°C / ±1°F	–	
Ordering Information	HI3817BP Backpack Lab includes HI98129 Combo pH/EC/TDS/temperature tester, acidity test kit, alkalinity test kit, carbon dioxide test kit, dissolved oxygen test kit, hardness test kit, nitrate test kit, phosphate test kit, set of 10 field test procedures, teacher's resource CD, teacher's guide and backpack.				
Reagents and Solutions only	HI3820-100 Acidity (as CaCO <sub>3</sub> ), 110 tests avg. HI3811-100 Alkalinity (as CaCO <sub>3</sub> ), 110 tests avg. HI3818-100 Carbon Dioxide, 110 tests avg. HI3810-100 Dissolved Oxygen, 110 tests avg. HI3812-100 Hardness, total(as CaCO <sub>3</sub> ), 100 tests avg. HI3874-100 nitrate (as NO <sub>3</sub> <sup>-</sup> -N), 100 tests avg,		HI3833-050 Phosphate, 50 tests avg. HI70004P pH 4.01 buffer solution for HI98129, 20 mL sachets (25) HI70007P pH 7.01 buffer solution for HI98129, 20 mL sachets (25) HI70010P pH 10.01 buffer solution for HI98129, 20 mL sachets (25) HI70031P 1413 µS/cm conductivity calibration solution for HI98129, 20 mL sachets (25) HI70032P 1382 mg/L (ppm) TDS calibration solution for HI98129, 20 mL sachets (25)		

Backpack Lab™ contents subject to change