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Teaching guide in digital format   €   *Minimum invoiced order: € 130,00 + VAT*

Backpack Marine Science Test Kit   HI3899BP

This kit is designed to provide teachers with a comprehensive tool to familiarize students with important chemical tests for sea water analysis. These items are supplied with a comprehensive teacher's guide that includes in-depth information on each parameter, class activities and detailed procedures for field testing.

With this kit it is possible to carry out measurements of the following important parameters:

- Acidity ($CaCO_3$)
- Alkalinity
- Ammonia (NH_3-N)
- Carbon dioxide (CO_2)
- Phosphates
- Nitrite (NO_2-N)
- Nitrates (NO_3-N)
- Dissolved oxygen
- Salinity

HI3899BP

Backpack Lab Soil Quality Test Kit   HI3896BP

This soil quality kit is designed to provide teachers with a comprehensive tool to familiarize students with important chemical tests for soil quality and fertility assessment and to correlate these measures with plant metabolism. The items are supplied with a comprehensive teacher's guide that includes in-depth information on each parameter, class activities and detailed procedures for field testing.

Real examples help students understand the importance of macronutrients and other parameters of daily life.

This kit is therefore an in-depth introduction to the major themes on soil quality, and is presented in an easy-to-use format that makes lessons interesting.

Field analysis	Nutrients
- nitrogen - phosphorus - potassium - pH - conductivity - temperature	- nitrogen - phosphorus - potassium

HI3896BP

Backpack Lab Water Quality Educational Test Kit   HI3817BP

Backpack Lab® is designed to contain all accessories and reagents, in a practical and orderly way. Ideal for transport, this backpack can also make measurements in the field. The backpack includes a teacher's manual with information on each parameter, activities to be done in the classroom, designed to introduce students to each parameter, and detailed procedures for field analysis.

This kit provides teachers with a valuable tool to help students understand how to assess the water quality of streams, rivers and lakes.

It meets the need to assess the quality of water, providing you with the tests to check its basic parameters, namely:

Acidity (as $CaCO_3$)

Alkalinity ($CaCO_3$) Phenolphthalein & Total

Carbon Dioxide

Hardness ($CaCO_3$)

Oxygen, Dissolved

Nitrate (NO_3-N)

Phosphate

pH, Conductivity, TDS and temperature (with pocket electronic instrument)

The kit includes all the accessories and reagents necessary for the execution of 100 analyzes for each parameter (with the exception of iron, for which reagents are supplied for 50 tests). Replacement reagents are available in separate packages for each analysis parameter.

HI3817BP

Small portable laboratory   7219

The reagent case is especially designed for schools and caters to the needs of both students and teachers. All reagents are approved to be used in schools and can be disposed of easily just down the drain without any harm to the environment.
The case contains 6 colorimetric and titrimetric tests for at least 50 determinations each to determine the most important water parameters.

Parameter	Range
- Ammonium	- 0,2 - 3 mg / L NH_4^+
- Hardness (total)	- 1 drop = 1° d
- Nitrate	- 1 - 90 mg / L NO_3^-
- Nitrite	- 0,02 - 0,5 mg / L NO_2^-
- pH	- 4,0 - 9,0
- Phosphate	- 0,5 - 15 mg / L PO_4^{3-}

Features:
• Maximum safety due to exact labeling of all reagents.
• Safe results using color and turbidity compensation.
• Especially stable and rugged case as well as chemical resistant foam inlaye.
• High sensitivity down to the values of drinking water standards.
• Safe for the environment and easy disposal of used tests.

There are no disposal issue with these reagents, (both in the concentrated or diluted form) which belong to the zero danger class for water.

7219

Water analysis kit
7021

11 feasible experiments

Topics

- Water cycle; rain and rain gauge
- Drinking water and its distribution;
- Water pollution
- Biodegradable waste
- The detection of ammonia
- The detection of nitrites
- The detection of sulfates
- The detection of surfactants
- Biological indicators
- Water acidity
- Use of the universal indicator
- Use of the pH meter
- Acid rain

Equipment supplied

1 Beaker, 250 ml
1 Pencil dropper
1 Magnifying glass 7x
1 Funnel
1 Plastic stirrer
1 Water collector
1 Graduated cylinder 100 ml
2 Syringes with tube
1 pH indicator, pH 1-10
3 Solution of known pH
1 pH meter for soil
5 Petri dishes
5 Test-tubes with plug
1 Bottle of methylene blue
1 Bottle of sodium hydrate
1 Bottle of Griess reagent
1 Bottle of Nessler reagent
1 Bottle chloride acid, 10% sol.
1 Bottle of chloroform
1 Bottle of barium chloride, 10% sol.
1 Case

7021

Soil analysis kit
7022

13 feasible experiments

Topics

- The soil
- Mineral and organical fraction
- Soil porosity
- Soil permeability
- Soil acidity
- Soil carbonates
- Soil ammonia
- Soil nitrites
- Soil sulphates
- Soil surfactants
- Biodegradability

Equipment supplied

1 Beaker, 250 ml
1 Pencil dropper
1 Funnel
1 Plastic stirrer
1 Graduated cylinder, 100 ml
1 Spoon
3 Solutions of known pH
2 Syringes with tube
1 pH indicator, 1-10
1 pH meter for soil
5 Petri dishes
1 Pack of 30 filter paper discs
5 Test-tubes with bung
5 Jars with cap
1 Bottle of sodium hydrate
1 Bottle of methylene blue
1 Bottle of sodium hydrate
1 Bottle of Griess reagent
1 Bottle of Nessler reagent
1 Bottle chloride acid, 10% sol.
1 Bottle of chloroform
1 Bottle of barium chloride, 10% sol.
1 Case

7022

Laboratory for soil analysis   7204

Thorough analysis is a corner stone to support and maintain healthy, productive and biologically active soil. To effectively and efficiently plan all measures that affect the soil (fertilization, liming, etc.) it is crucial to determine the important soil parameters first. This reagent case for soil analysis is the perfect companion for economical, fast and convenient soil analysis, both in the field or in your laboratory. It contains all reagents, instruments and accessories required for the preparation of soil extracts and the subsequent determination of:

• Ammonium, Nitrite, Nitrate (N)   • Potassium (K)
• Phosphate (P)   • pH

The soil extracts are either prepared with Calcium-Acetate- Lactate (CAL) solution (prior to the determination of P and K) or with CaCl2 solution (prior to the determination of N and pH).
Reagents are sufficient for 110 CaCl2 extractions, 7 CAL extractions and 60 – 100 tests.

7204

Laboratory for microbiological research   7205

This kit allows the performance of a wide range of microbiological analysis related to water and soil. It has been designed as a field laboratory in order to use it even in sampling sites.
It is possible to perform the following reseaches and analysis:
• presence of microorganisms in water;
• presence of microorganisms in the soil;
• antibiotics' effects;
• presence of yeasts in nature;
• formation of gas during the alcoholic fermentation;
• development and growth of bacterial colonies at different temperatures.

Equipment supplied

• Equipment for filtration under pressure	• Culture soil in sterile test-tubes
• Filtration valve with 3 ports	• Culture soil in Petri dishes
• Plastic adapters for filtration	• Discs with sterile filters
• Pincers for filters	• Cellulose nitrate filters
• Handle for inoculation	• Glass filters

7205

Deep water sampler   7152

This item can be used to take samples of water, from a pond, from a stream, from a pool or from other basin at a measurable depths.

7152

Secchi's disk   7000

This item permits perform once of a qualitative evaluation of turbidity considering water of ponds, pools etc, according to their depth.

7000

Wall station 7012

The station code 7012 has been designed for a first quantitative study of air quality. It can be installed against the wall or on a tripod and it measures the temperature, the humidity and the concentration of carbon monoxide typical of pollution caused by traffic. It is possible to set an alarm that sounds when the CO level exceeds a specific threshold. The supplied sensors are powered by lithium batteries (replaceable) that permit the unit to operate continuosly up to three months. At the end of the measurement, the data are transferred on a pc and seen on a graph.
Range: temperature: from -35° to +80°C.
Relative humidity: from 0% to 100% RH.
CO: from 0 to 200 ppm CO.
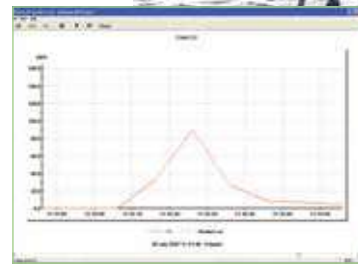(Values greater than 800 ppm can damage the sensor).

7012

Air pollution station on tripod 7014

As code 7012, but on a tripod.

7014

ECOLOGIA - Digital instruments

Oximeter - for measurement of dissolved oxygen 7253

This pulse oximeter is equipped with a polarographic probe with built-in temperature sensor that allows a precise measurement of dissolved oxygen. Applications: aquariums, medical laboratories, agriculture, water conditioning, fish farming, mining, education, quality control.

Display	13mm LCD, 3 1/2 digits
DO measurement range	0 – 20.0 mg/l
Resolution	0.1 mg/l
Accuracy	± 0.4 mg/l (after calibration within 23 ± 5°C)
Compensation Temperature Sensor	Automatic from 0 to 40°C
Control panel knobs	ZERO and CAL knobs
Battery	006P DC 9V
Operating Temperature	0°C – 50°C
Operating Humidity	Less than 80% RH
Size	Instrument: 131 x 70 x 25 mm Probe: 190 mm x 28 mm diameter Length of sensor cable: 4 m
Weight	390g (with probe)
Accessories included	1 Oxygen probe (OXPB-09N) 1 Operator's Manual 2 Spare Probe with diaphragm set, OXHD-04 1 Electrolyte for OXEL-03 probe

7253

Pocket TDS Tester   HIP

This pocket-sized instrument guarantees you a great accuracy of the measurements of total dissolved solids (TDS).
Thanks to the internal microprocessor, this model performs calibration and temperature compensation automatically.

Range	0 to 1999 ppm
Resolution	1 ppm
Accuracy	±2% f.s.
Calibration	automatic, at 1382 ppm
Calibration	Calibration Solution 1382 ppm - not included
Temperature Compensation	Automatic, 0 to 60°C, ß=2% / °C
Battery Type / Life	2 x 1.5V / circa 200 hours
Auto-off	after 5 minutes of non-use
Environment	0 to 50°C; U.R. max 95%

HIP

Calibration solution TDS 1382 ppm   HI7032P

Solution at 1382 ppm, in bag (25 x 20 mL).

Pocket Conductivity Tester   HIP5

This pocket tool gives you great accuracy in conductivity measurements (EC). Thanks to the internal microprocessor, this model performs calibration and temperature compensation automatically.

Range	0 to 1999 µS/cm
Resolution	1 µS/cm
Accuracy	±2% f.s.
Calibration	automatic, at 1413 µS/cm
Calibration	calibration Solution
Temperature Compensation	automatic, 0 to 60°C, ß=2% / °C
Battery Type / Life	2 x 1.5V / circa 200 hours
auto-off	after 5 minutes of non-use
Environment	0 to 50°C; U.R. max 95%

HIP5

Hand-Held Thermo-Hygrometer   HI9564

This is a new portable thermohygrometer that allows quick and reliable measurements in any condition, even in damp and dark places.
Thanks to the special internal microchip, the RH probe supplied is able to store calibration data.

Battery Type / Life	1 x 9V / approx. 250 hours of continuous use; auto-off after 20 minutes of non-use
Environment	0 to 60°C; U.R. max 98% non-condensing
Accuracy - Temperature	±0.5°C / ±1.0°F
Accuracy - RH	3% RH (50.0 to 85.0%); ±5% RH (outside)
Resolution - Temperature	0.1°C / 0.1°F
Resolution - RH	0.1% RH
Range - Temperature	0.0 to 60.0°C / 32.0 to 140.0°F
Range - RH	20.0 to 95.0%
Probe	RH combined probe with built-in temperature sensor, microchip and 1 m (3.3') cable (included)

HI9564

Pocket EC/TDS and pH Tester, High Range   HI98130

This instrument is designed to obtain accurate measurements of pH, EC / TDS and temperature. It is no longer necessary to use 2 or 3 instruments for these measurements: in fact, this tester displays the pH or EC / TDS readings automatically compensated in temperature and the temperature value of the sample in degrees Celsius or Fahrenheit. To achieve more precise results in any particular application, the EC / TDS conversion factor and the temperature compensation coefficient ß can be set by the user.

Battery Type / Life	4 x 1.5V / approx. 100 hours of continuous use; auto-off after 8 minutes of non-use
Calibration - EC/TDS	automatic, 1 point
Calibration - pH	automatic, 1 or 2 points with 2 sets of memorized buffers (pH 4.01 / 7.01 / 10.01 or 4.01 / 6.86 / 9.18)
Temperature Compensation	pH: automatic; EC/TDS: automatic with ß adjustable from 0.0 to 2.4% / °C
Environment	0 to 50°C (32 to 122°F); RH max 100%
pH Electrode	replaceable
TDS Conversion Factor	adjustable from 0.45 to 1.00
Accuracy - Temperature	±0.5°C /±1.0°F
Accuracy - EC	±2% f.s.
Accuracy - pH	±0.05 pH
Accuracy - TDS	±2% f.s.
Resolution - EC	0.01 mS/cm
Resolution - pH	0.01 pH
Resolution - TDS	0.01 ppt
Resolution - Temperature	0.1°C / 0.1°F
Range - EC	0.00 - 20.00 mS/cm
Range - pH	0.00 - 14.00 pH
Range - TDS	0.00 - 10.00 ppt
Range - Temperature	0.0 - 60.0°C / 32.0 - 140.0°F

HI98130

Storage solution for electrodes   HI70300M
Bottle, 230 ml

HI70300M

Pocket Checker pH Tester   PH-2

It is an easy-to-use tool with a large display and a single operation button.

• Replaceable electrode
• Automatic calibration for precise pH measurements
• Ideal for environmental analyzes, in the field and in the laboratory

Parameter	pH
Range pH	0.0 to 14.00 pH
Resolution pH	0.1 pH
Accuracy pH	±0.2 pH
Calibration	Automatic in one or two points

PH-2

Electrode for PH-2   HI1271

Replacement electrode for PH-2.

HI1271

Solution for cleaning pH meters electrodes   HI7061M

230 ml bottle to clean the junction of the electrodes.

pH Tester   HI98107

The pocket tester is sturdy and reliable and is ideal for laboratory use.
This new tester has a thickness of less than 2 cm and is extremely ergonomic, comfortable to hold in your hand.
The instrument is simple to use because it is equipped with only 2 buttons: one dedicated to switching on and off; the other dedicated to calibration.

HI98107

Calibration solutions for pH meters   HI774P

20 ml buffer solution at pH = 4.01 and 20 ml buffer solution at pH = 7.01 of potassium phthalate acid.
Calibration temperature 25°C.

PEI Body Gel Filled pH Electrode with Bluetooth   HI12302

Flexibility and simplicity of use, no cables, no tools. Simply download the free app to turn your compatible Apple or Android device (not included) into a full-featured pH meter. HI12302 is equipped with a combined pH electrode with plastic body (PEI), double junction, gel filling, for general use. The high quality electrode is equipped with a built-in temperature sensor that ensures automatic temperature compensation both during measurement and during calibration.
HI12302 is able to perform pH measurements on a scale ranging from 0.00 to 13.00 pH, measurements in mV and temperature measurements on a scale ranging from -5.0 to 70.0 ° C. It can be used almost anywhere: in the laboratory, in production or in the classroom.

Reference	double, Ag/AgCl
Junction	ceramic, single
Electrolyte	gel
pH Range	da 0.00 a 13.00 pH
mV Range	±420 mV
Temperature range	-5.0 to 70.0°C
Operating Temperature	-5.0 to 70.0°C
Tip Shape	spheric
Temperature Sensor	yes
Body Material	PEI
Tip diameter	12 mm
Battery Type/Life	CR2032 3V lithium ion/approximately 500 hours
Connection	Bluetooth® Smart (Bluetooth 4.0), 10m range

iPad and stand are not included.

HI12302

Digital Thermometer   CHT

Digital Thermometer with Stainless Steel Penetration Probe.
Suitable for temperature measurements in air, liquids, and soil.
Scale in °C and F.
AAA batteries power supply.

Life	3000 hours
Range	- 50,0 °C to + 150,0 °C
Resolution	0,1 °C
Accuracy	±0.3°C

CHT

Pocket Thermometer   CHT-1

The penetration probe is connected with a 1 meter long cable to the instrument, which is provided with a support, to remain in a vertical position.
Suitable for temperature measurements in air, liquids, and soil.

Life	3000 hours
Range	da - 50,0°C a + 150,0°C
Resolution	0,1°C
Accuracy	±0.3°C

CHT-1

Carbon monoxide meter   7252

With this tool you can monitor the level of CO pollution in various environments and check, thanks to warning lights/sounds, when it exceeds the warning threshold. The data can be downloaded on to a PC.
Two functions: CO (carbon monoxide), Temperature - CO Range: 0 to 1000 ppm
Temperature: 0 to 50 °C, °C / °F - CO measurement with fast response time - High accuracy and high repeatability
Stand-alone device, easy to carry and use - with a CO alarm setting function
Large LCD display, high contrast, easy to read
Memory function to hold the display value
Record the Max and
Min reading - RS-232 PC and USB interface
Sturdy structure with hard case - Battery powered or with 9Vdc adapter.

Display	LCD 52 mm X 38 mm, dual function. Selection °C / °F
Alarm Setting	only for CO measurements
Data hold	holds the reading on the display
Display refresh time	approximately 1 second
Auto power off	to save battery life or manual through button
Zero button	to set the zero reading
Data output	RS-232/USB
	* Connect the optional RS-232 cable UPCB-02
	* Connect the optional USB cable USB-01
Operating temperature	0°C – 50°C
Operating Humidity	less than 85% RH
Power Battery	Battery 1,5V (UM4, AAA) X 6 pieces
Weight	336g
Size	210 X 68 X 42 mm
Accessories Included	Instruction Manual
	Carrying Case
Optional Accessories	cable RS-232 UPCB-02
	cable USB USB-01
	acquisition software SW-U801-WIN
ELECTRICAL SPECIFICATIONS (23±5°C)	CO (carbon monoxid)
Range	0 – 1000 ppm
Resolution	1 ppm
Temperature	0°C – 50°C
Resolution	0,1°C

7252