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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 ($\text{NH}_3\text{-N}$)
- Carbon dioxide (CO_2)
- Phosphates
- Nitrite ($\text{NO}_2\text{-N}$)
- Nitrates ($\text{NO}_3\text{-N}$)
- 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 CaCO₃)
- Alkalinity (CaCO₃) Phenolphthalein & Total
- Carbon Dioxide
- Hardness (CaCO₃)
- Oxygen, Dissolved
- Nitrate (NO₃-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 inlay.
- 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

- | | |
|--|--|
| <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 1-14
- 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 Box



7021

Soil analysis kit

7022

13 feasible experiments

Topics

- | | |
|---|---|
| <ul style="list-style-type: none"> • The soil • Mineral and organical fraction • Soil porosity • Soil permeability • Soil acidity • Soil carbonates | <ul style="list-style-type: none"> • 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, 1-14
- 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 Box



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

Items for sample's collection - ECOLOGY

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 continuously 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).

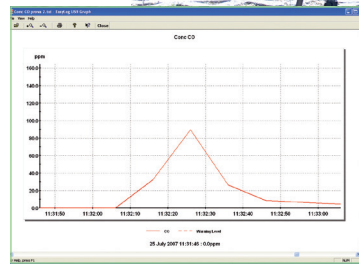


7012

Air pollution station on tripod

7014

As code 7012, but on a tripod.



7014

Oximeter - for measurement of dissolved oxygen

7253

This 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	13 mm 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	390 g (with probe)
Accessories included	1 Oxygen probe (XPB-09N) 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 TDS	0 to 1999 ppm
Resolution TDS	1 ppm
Accuracy TDS	±2% f.s.
Calibration	automatic, at 1382 ppm
Calibration	calibration Solution 1382 ppm - not included
Temperature compensation	Automatic, 0 to 60°C
Battery type / life	2 x 1.5V / circa 200 hours
Auto-off	after 5 minutes of non-use
Environment	0 to 50°C; RH max 95%



HIP

Calibration solution TDS 1382 ppm

HI7032P

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

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 β can be set by the user.



Range - pH	0.00 - 14.00 pH
Resolution - pH	0.01 pH
Accuracy - pH	±0.05 pH
Temperature compensation - pH	automatic
Calibration - pH	automatic, 1 or 2 points with two sets of standard solutions (pH 4.01 / 7.01 / 10.01 or pH 4.01 / 6.86 / 9.18)
Range - EC	0.00 - 20.00 mS/cm
Resolution - EC	0.01 mS/cm
Accuracy - EC	±2% f.s.
Calibration - EC	automatic, 1 point - 12.88 mS/cm
Range - TDS	0.00 - 10.00 ppt
Resolution - TDS	0.01 ppt
Accuracy - TDS	±2% f.s.
Calibration - TDS	automatic, 1 point - 6.44 ppt (g/L)
Temperature compensation EC / TDS	automatic with β adjustable from 0.0 to 2.4% / °C
EC / TDS conversion factor	adjustable from 0.45 to 1.00
Range - temperature	0.0 - 60.0°C / 32.0 - 140.0°F
Resolution - temperature	0.1°C / 0.1°F
Accuracy - temperature	±0.5°C / ±1.0°F
pHelectrode	included (replaceable)
Battery type / life	4 x 1.5V / approx. 100 hours of continuous use; auto-off after 8 minutes of non-use
Environment	0 to 50°C; RH max 100%

HI98130

Storage solution for electrodes

HI70300M

Bottle, 230 ml



HI70300M

Pocket 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, on the field and in the laboratory

pH range	0.0 to 14.00 pH
pH resolution	0.1 pH
pH accuracy	±0.2 pH
pH calibration	automatic in one or two points
Auto-off	after 8 minutes, 60 minutes, or disabled
Battery type / life	1 x CR2032 1.5V / circa 1000 hours
Environment	0 to 50°C; RH max 95%


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.

Pocket waterproof 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.



pH range	0.0 to 14.00 pH
pH resolution	0.1 pH
pH accuracy	±0.1 pH
pH calibration	automatic in one or two points
Temperature range	0.0 to 50.0°C
Temperature resolution	0.1°C
Temperature accuracy	±0.5°C
Auto-off	after 8 minutes, 60 minutes, or disabled
Battery type / life	CR2032 3V / circa 800 hours
Environment	0 to 50°C; RH max 100%

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-optional pH meter. HI12302 is equipped with a pH electrode with durable 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.

It can be used almost anywhere: in the laboratory, in production or in the classroom.

pH range	0 to 12 pH
pH resolution	0.1, 0.01, 0.001 pH
pH accuracy	±0.005 pH
Reference cell type	double, Ag/AgCl
Max pressure	2 bar
Junction	ceramic, single
Electrolyte	gel
Operating temperature	-5.0 to 70.0°C
Temperature sensor	yes
Tip	spheric, 12 mm diameter
Total length	100 mm / 165 mm
Connection	Bluetooth 4.0, 10 m range
Battery type / life	CR2032 3V lithium ion / approximately 500 hours
Calibration points	up to 5 points
Calibration values	1.68, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45 pH
Temperature compensation	automatic
Compatibility	Android (4.0 Bluetooth® technology and 4.3 Android system or next); iOS (third gen iPad or more recent, iPhone 4S or next models)



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.



Range	-50,0 °C to +150,0 °C
Resolution	0,1 °C
Accuracy	±0.3°C
Battery type / Life	1 x CR2032 / ca 2000 hours

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.



Range	-50,0 °C to +150,0 °C
Resolution	0,1°C
Accuracy	±0.3°C
Battery type / Life	3 x 1.5V AAA / ca 2 years

CHT-1