

611-2261 (10-020) 10 Level Conductivity Meter

Warranty and Parts:

We replace all defective or missing parts free of charge. Additional replacement parts may be ordered toll-free. We accept MasterCard, Visa, checks and School P.O.s. All products warranted to be free from defect for 90 days. Does not apply to accident, misuse or normal wear and tear. Intended for children 13 years of age and up. This item is not a toy. It may contain small parts that can be choking hazards. Adult supervision is required.



Description:

Visually compare conductivity between different solutions. The LED is numbered from 1-10. Each light represents a unique level of conductivity from very low (1) to very high (10), providing quantitative and qualitative readings.

How to Teach with 10 Level Conductivity Meter: Electricity; Ionic Solutions

Concepts Taught: Electrical Conductivity

Curriculum Fit: Chemistry; Electrochemistry

Grades 6-8 and up.

Experiment: Solutions Containing Ions

Purpose: To show that ions in solution conduct an electric current.

Note: Always dispose of chemicals and solutions in a manner approved by your chemistry department in accordance with the Material Safety Data Sheet for the particular chemical.

Additional Materials Needed: Glass beakers (5), Chemicals, Distilled water, Kimwipes, Glass stirring rods, Latex gloves, Safety goggles

Procedure:

- Using the five beakers, prepare the following solutions. You may need to use the glass stirring rods to dissolve the NaCl and NaHCO₃ in distilled water:
 - Tap water
 - Vinegar (CH₃COOH)
 - Concentrated solution of Sodium Chloride (NaCl) in distilled water
 - Concentrated solution of Baking Soda (NaHCO₃) in distilled water
 - Distilled Water
- Dip the probes of the 10 Level Conductivity Tester in Distilled Water and wipe them gently with a Kimwipe.
- Turn on the 10 Level Conductivity Tester using the button located on the side of the black box.
- Immerse the two probes in the first solution (tap water) and record the resulting value from 1-10 below. Note: The two probes should be immersed to the same depth in every solution to ensure consistency in the measurements taken. After recording the conductivity value, dip the two probes in distilled water and wipe them dry with a Kimwipe.
- Repeat step 4 with the remaining solutions (vinegar, NaCl and NaHCO₃) prepared in step 1 on page 1, and record the resulting conductivity values in Table 1 below.

Table 1 – Conductivity of Solutions Containing Ions

Solution	Conductivity
Tap Water	
Vinegar	
NaCl	
NaHCO ₃	

6. Make observations about which solution is least conductive and which is most conductive. Write your observations below.

7. Write the corresponding chemical equations for the dissociation of NaCl and NaHCO₃ in distilled water.

NaCl

NaHCO₃

Related Products:

Science First[®] is a designer and manufacturer of hands-on science labs. Our products are available from most science education distributors. For more information contact us.

611-2260 Conductivity of Water Tester - Used to determine the conductivity of different liquids or concentrations, this qualitative device causes a light bulb to glow when water conducts electricity. Because the cord at the side can't contact water, there is absolutely no shock hazard. Includes plastic molded body with recessed electrical connections and electrodes. Attaches to standard ring stand up to 12.7 mm in diameter (not included) with thumbscrew clamp. Operates on 110 volt AC only. *You need 15 watt light bulb.* Weight: 0.11 kg.