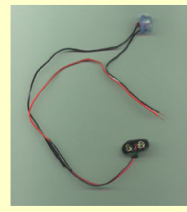


You can make your own conductivity tester from a few inexpensive parts or order an assembled version from Flynn Scientific. If you order a pre-assembled one, you will probably want to add a battery clip so the battery can be easily connected. All parts are available from Radio Shack.

Parts:

- 1 - LED (Light Emitting Diode)
- 1 - Resistor(330 ohm, 1/4 watt)
- 1 - 9 volt Transistor Radio Battery
- 1 - Battery Clip to fit Battery)
- 1 - 8 inch piece Red wire
- 1 - 8 inch piece Black wire
- 1 - 4 inch piece Black wire
- tape

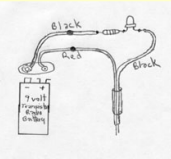


Completed Tester (battery not shown)

If you've purchased the assembled tester all that's necessary is to add the battery clip and battery. There are 4 wire ends that are not connected. 1 red and 1 black are held together by a small piece of clear "spaghetti" tubing. These 2 wires are the tester's "probe" that you will insert into the substance to see how/if it conducts. Make sure these bare ends are kept separate and do not touch each other.

Connect the remaining two ends of the wires on the battery clip (red to red and black to black). Snap the battery clip onto the battery and touch the "probe" wires together. The led should light. I have purchased battery clips with the wires connected wrong. If the LED doesn't light, disconnect the battery clip wires from the tester wires and re-connect in reverse (red to black and black to red). Once the tester is working, use a small piece of electrical (scotch tape or even adhesive tape will also work) to insulate the bare wires where the battery clip is connected to the tester.

Disconnect the battery clip from the battery when the tester is not in use to prevent accidental discharge of the battery.



If you wish you can make your own from the parts listed above. Start by removing about 1/2 inch of the insulation from each end of the 3 wires. Assemble the components as shown in the diagram to the left. The wires may be connected by twisting them together tightly and wrapping the bare portion with tape. For added reliability you may wish to solder the connections. Be careful as the plastic LED body will melt if too much heat is applied.

1. Connect the 2, 8 inch wires to the battery clip (red to red and black to black).
2. Connect either end of the resistor to the other end of the 8 inch black wire.
3. Connect the opposite end of the resistor to the Cathode of the LED.
4. Connect the 4 inch black wire to the remaining lead on the LED (Anode).
5. If you wish, you can tape the completed tester to a large tongue depressor to prevent flexing and breaking the wires where they are connected together. Allow the "probe" wires to extend about an inch past the end of the tongue depressor.

