



CONDUCTIVITY OF SOLUTIONS APPARATUS

CSA001

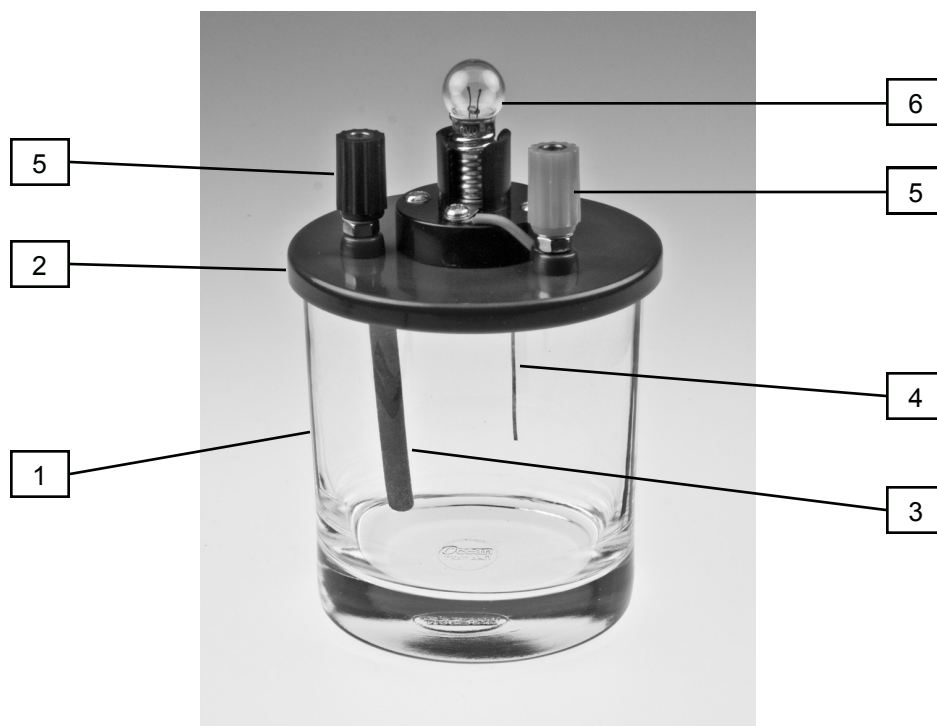


Figure 1

DESCRIPTION

The Conductivity of Solutions Apparatus (CSA001) allows students to investigate the electrical conductivity of various aqueous solutions. It consists of a glass jar (1, *Figure 1*) with an electrically insulating lid (2) onto which two electrodes are mounted, a carbon rod (3) and a copper wire (4). The electrodes are connected to two binding posts (5). A small lamp (6) is connected in series into the lead to the copper electrode as an indicator that a current is flowing.

The apparatus is operated at 6V d.c., provided by "D" size batteries (not included) or a user-supplied power supply. If a d.c. milliammeter is available, it can be used to increase the sensitivity of the apparatus to small currents.

SPECIFICATIONS

Electrodes:	Anode:	Copper
	Cathode:	Carbon
	Length of Electrodes:	6cm
Light Bulb:	Miniature type,	3.8V 0.3A
Container capacity:	270ml	
Dimensions:	8cm x 8cm x 13cm	
Weight:	12 oz	

OPERATION

EQUIPMENT NEEDED

1	Conductivity of Solutions Apparatus	Test solutions (about 250 ml of each)
4	"D" size batteries and	Such as:
4	Battery holders	Distilled water, tap water,
	- or -	table salt solution, vinegar,
1	D.c. power supply with 6V output	orange juice, coca-cola.
2 or 3	Connecting cords	(avoid solutions of aggressive or toxic
1	Milliammeter, 200mA or 500mA	substances)
	range (optional)	Small piece of fine sandpaper

SETUP

The Conductivity of Solutions Apparatus operates on 6V d.c. and draws a current of up to 200mA, depending on the solution used in the glass jar. You can obtain the electrical power from four "D" size batteries connected in series or from a low voltage power supply, if one is available.

- First prepare your test solution. You will need about 250ml of liquid. For suitable test solution suggestions, see below.
- Clean the copper electrode with a piece of fine sandpaper
- Fill the solution into the jar, make sure the electrodes are oriented at right angles to the lid and are not touching each other, and place the lid onto the jar.
- Connect the Conductivity of Solutions Apparatus to the power source with the connecting cords as shown for battery power in *Figure 2*.

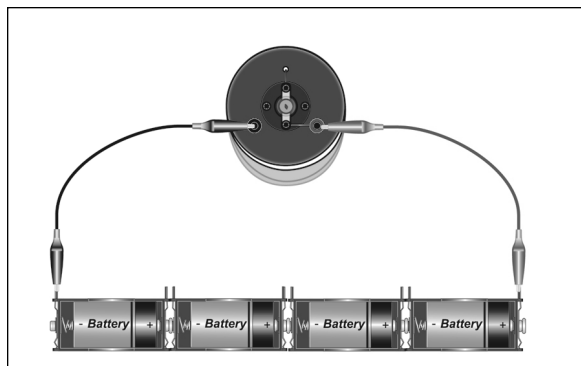


Figure 2