

## Question #61132, Chemistry / Physical Chemistry

### Question:

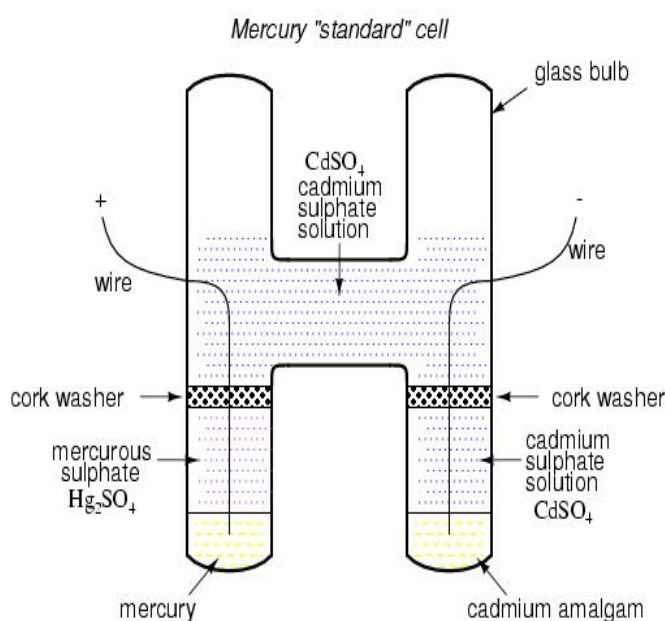
Briefly discuss Weston cell.

### Answer:

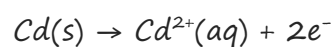
The Weston cell is a wet-chemical cell that produces a highly stable voltage suitable as a laboratory standard for calibration of voltmeters. Invented by Edward Weston in 1893.

The anode (-) is an amalgam of cadmium with mercury; cathode (+) is a pure mercury over which a paste of mercurous sulphate and mercury is placed. The electrolyte is a saturated solution of cadmium sulphate.

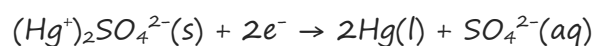
As shown in the illustration, the cell is set up in an H-shaped glass vessel with the cadmium amalgam in one leg and the pure mercury in the other. Electrical connections to the cadmium amalgam and the mercury are made by platinum wires fused through the lower ends of the legs.



Anode reaction:



Cathode reaction:



Reference cells must be applied in such a way that no current is drawn from them.