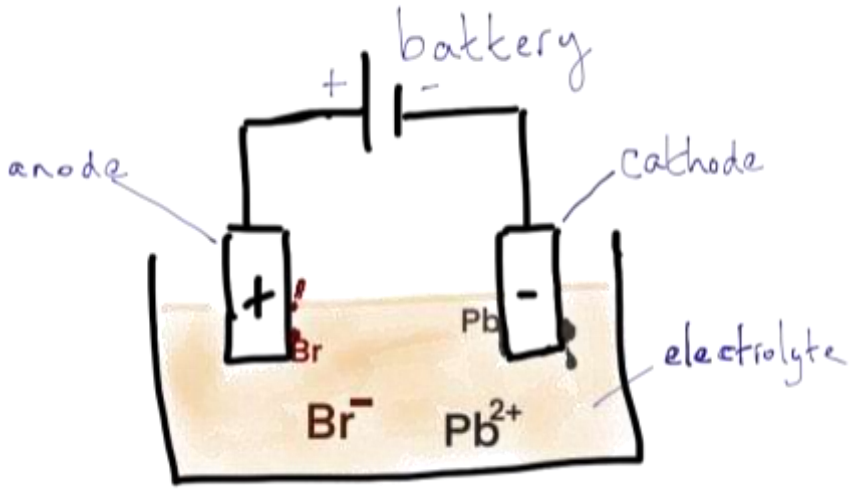
Passing electricity (direct current) through molten (melted) lead bromide

Circuit Diagram



When the lead bromide melts the ions are freed from the lattice and they can move and carry charge. A current begins to flow. Ions in the solution part of the circuit allow charge(electrons) to move.

Negatively charged ions (anions) are attracted to the positively charged electrode (the anode).

Bromide ions Br- are attracted to the anode. Once there each Br- ion gives up one electron which joins the circuit. Bromine atoms then quickly pair up to form bromine molecules. Brown bromine gas is produced and can be seen bubbling off. Test with damp litmus paper. The litmus paper goes red and then is quickly bleached white by the bromine gas.

Positively charged ions (cations) are attracted to the negatively charged electrode (the cathode)

Positively charged copper cations are attracted to the negatively charged electrode (the cathode). At the cathode the lead ions accept 2 electrons to produce elemental lead.