

An apparatus (1) for the production of iron metal through reduction of iron ore by an electrolysis reaction, the apparatus comprising a electrolyte circulation device (30) including a pumping device (22) located at one extremity of the casing (4) and at least a first (31A) check valve located in the electrolyte chamber (6) and a second (31B) check valve located in the gas recovery part (8), said electrolyte circulation device (30) being designed, when actuating by an actuator (28), to aspirate the electrolyte (5) from the electrolyte chamber (6) or to pull the electrolyte (5) back into the gas recovery part (8).