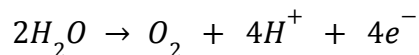


Parameters for Oxygen Production

The reaction is



Therefore, to produce 1 mol of O_2 (24L), we need to move 4 *moles* of electrons through the circuit and this is $4F = 4 \times 9.65 \times 10^4 = 3.86 \times 10^5 C$ of charge. With a current of 20 A, we move $20 \times 60 = 1200 C$ of charge per minute. Therefore, we produce,

$$\frac{24}{3.86 \times 10^5} \times 1200 = 0.0746 L \text{ of } O_2 \text{ per minute.}$$

It is extremely difficult to conduct any electrolytic operation with such a high current. We would need huge electrodes because whatever the nature of the electrode used, the current is highly dependent on the surface of the electrode. The upper limit is of the order of $0.1 - 1 A/dm^2$.