Electrochemical work

$3Ag^+ + Al \rightarrow 3Ag + Al^{3+}$ $\qquad \Delta^\circ_{cell} = 2.46\ V$

$\Delta G^\circ = w_{max} = -\ n\ F\ \Delta^\circ$

n = mol of e^-

F = faraday = 96,500 C / mol e^-

Δ° = standard reduction potential V (J/C)

$\Delta G^\circ = -(3\ mol\ e^-)\ (96{,}500\ C/mol\ e^-)(2.46V)$

$= -712170\ CV = -712170\ J = -712\ kJ$