Cell voltage calculator

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The Cell Potential Calculator is a tool that calculates the potential of an electrochemical cell under non-standard conditions. Electrochemical reactions do not always occur at standard conditions (298 K, 1 atm pressure, and 1 M concentration), so the calculator helps you adjust the cell potential based on actual experimental conditions.

By inputting various factors like temperature, concentration, and the number of electrons involved, the calculator helps you estimate the cell"s potential. This calculation is essential for determining the feasibility of a reaction and understanding how energy is transferred in electrochemical processes, such as in batteries or fuel cells.

Example Data:E?cell = 1.10 V (Standard cell potential)n = 2 (Number of moles of electrons transferred)T = 298 K (Temperature)Q = 10 (Concentration of products/reactants ratio)Step 1: Apply the Nernst equation:

Consider an electrochemical cell comprising a magnesium anode and a copper cathode. The standard reduction potential for Mg??/Mg is -2.37 volts, and for Cu??/Cu, it is +0.34 volts. Using the Voltaic Cell Calculator:

E?cell = 0.34 V (Cu??/Cu) - (-2.37 V (Mg??/Mg)) = 2.71 VThis example underscores the calculator"s capacity to provide quick and accurate insights, essential for educational purposes and practical applications alike.

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