

Reducing the rate of corrosion of oil and gas equipment by polarization surface

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Abstract

The article describes a new method for reducing the rate of corrosion of a metal surface by its polarization. The primary cause of metal corrosion is the thermodynamic instability of its electrode potential. Shifting the stationary potential to the equilibrium value results in the polarization of the metal surface, and consequently to reduce the corrosion rate. Studies have shown that when the basic electrochemical characteristics of the work medium - pH and redox potential, there is a shift of the electrode potential at the metal surface. The shift of the electrode potential of steel 20 to the reversible potential of significantly reduced the rate of corrosion. Application of this method and apparatus will significantly reduce the amount used in the oilfield corrosion inhibitors or completely eliminate them, which will lead to a reduction in material costs and reduce contamination of finished products inhibiting substances.