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**Micelles-assisted MnO-4 oxidation of isoleucine: A kinetic study**

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**Abstract**

The title reaction has been studied spectrophotometrically as a function of [MnO-4], [isoleucine], [H<sub>2</sub>SO<sub>4</sub>], and temperature in absence and presence of cationic micelles of cetyltrimethylammonium bromide (CTAB). Under pseudo-first order conditions, the reaction follows first order kinetics with respect [isoleucine]. At lower values of [CTAB] ( $\leq 40.0 \times 10^{-4}$  mol dm<sup>-3</sup>), the catalytic effect of cationic micelles of CTAB may be due to the incorporation/solubilization of isoleucine and MnO-4 into the interfacial region of Stern- and palisade layer. In contrast, at higher values of [CTAB] ( $\geq 40.0 \times 10^{-4}$  mol dm<sup>-3</sup>), the inhibitory effect was observed due to the dilution. Thermodynamic parameters were computed by studying the reactions at different temperatures (303-333 K). Plausible mechanisms are suggested. © Taylor & Francis Group, LLC.

**Author Keywords**

CTAB; Isoleucine; Micellar catalysis; Permanganate

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