

Consecutive chlorobenzene feed into low valent Ni(I) and then into high valent Co(III) electron mediators for its effective removal

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Because of halogen group in aromatic halides, oxidative degradation induces polymerization. Present investigation focuses remove halogen from chlorobenzene first by mediated electrocatalytic reduction (MER) process and then followed oxidative removal by mediated electrochemical oxidation (MEO) process. First, two electron mediators Co(III) and Ni(I) at each anodic and cathodic half-cells, respectively, were generated using divided paired electrolytic process. Then, the chlorobenzene gas was treated at cathodic electroscrubber for its dechlorination and sequentially treated at anodic electroscrubber for further oxidative degradation. The chlorobenzene removal and product formation were monitored by online FTIR gas analyser and discussed.

Key words: Chlorobenzene, MEO, MER, electroscrubber.