

# Electroreduction of Organic Compounds, 34 [1]. Cathodic Dehalogenation of Chloroarenes with Electron-Donating Substituents

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The electrochemical reduction of chlorinated arenes with electron-donating substituents, *i. e.* chlorotoluenes, -anisoles and -phenols, is studied. Preparative electrolyses are run in various solvent-supporting electrolytes under potentiostatic and galvanostatic conditions at lead or carbon cathodes. A partial and mostly regioselective hydrodechlorination of compounds with two or more chloro substituents is possible under suitable conditions. The replacement of one single chloro substituent, in particular in a *para*-position, is difficult. Highly toxic and persistent oligochloro derivatives are thus transformed into less problematic compounds with a low degree of chlorination. The chlorine content of real-life materials such as extracts of soil contaminated with chlorinated phenols and *Nitrofen*<sup>®</sup> can also be significantly decreased by electroreduction.

*Key words:* Electrolysis, Dehalogenation, Chloroarenes