

SORPTION OF METHYLMERCURY AND MERCURY FROM AQUEOUS SYSTEMS USING TANNIN SORBENTS

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In recent years, the increasing concern about the severe impact on ecosystems of toxic, persistent constituents like mercury has become an important issue in environmental legislation. The establishment of emission limit values requires essential improvements of both process technology and flue gas cleaning techniques. Gas-fired power plants are widely used for energy production, supplying heat and power in several countries. During the gas prospecting operation, in deep wells, considerable mercury occurs in the gas. If this gas were combusted directly, substantial emissions would occur. Therefore, flue gas cleaning or other emission controls must be considered. Such a gas mixture can be pre-treated by passage through an activated carbon column to trap the mercury prior to combustion. We tested the capacity of electroleaching of the mercury-laden activated carbon to allow re-use of the carbon and to concentrate the mercury. Anodic dissolution of the absorbed mercury, is followed by oxidation brought about by oxidants produced by electrolysis of the cell electrolyte, i. e., the sodium chloride solution. Simultaneously, the soluble mercury species generated as a result of the oxidation processes are deposited at the cathode surface. The results appear promising, with collection of up to 96% of the Hg absorbed by the activated carbon.