

Removal Efficiency Radioactive Methyl Iodine on Impregnated Activated Carbon Fiber

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In nuclear power plant, the impregnated activated carbon has been used as a filter media to control the release of radioactive methyl iodine to environment. This conventional activated carbon has 3 kinds of pores consist of micro pore which contributes adsorption, macro pore and transitional pore. On the other hand, the surface of activated carbon fiber(ACF) is covered by only micro pores which have uniform pore size and contribute adsorption. Therefore, the filtration area of ACF is much larger than that of bead type activated carbon. This means that ACF filter can lower filtration speed and longer reaction time, then gives high collection efficiency. In this study, impregnated ACF was prepared under the variation of triethylene diamine(TEDA) amount. The analysis of Porosimeter and BET was performed to identify the relation of the pore volume and specific surface with the increase of impregnated TEDA. And also, the analysis of TGA and SEM was carried out to confirm the impregnation of TEDA on ACF. And the adsorption of radioactive methyl iodine was conducted according to standard test method(ASTM D3803).