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SOLUBILITY AND SORPTION BEHAVIOR OF NAPHTHALENE ON SEDIMENTS IN THE PRESENCE OF DISSOLVED ORGANIC ACID

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Abstract

The solubility and sorption behavior of naphthalene in the presence of dissolved organic acid was studied. The presence of dissolved organic acids at lower concentrations had only a little effect on naphthalene sorption. However, when the concentration exceeds a certain concentration, a significant inhibition was observed. Moreover, the inhibition enhanced with the increasing concentrations of dissolved organic acids. The change trend on solubility is similar to the sorption of naphthalene, that is, the solubility of naphthalene at lower concentration increased slowly and significant at higher concentration of dissolved organic acids, and followed the order butyric acid > propanoic acid > acetic acid > formic acid. In addition, the change of structure of sediment is an important factor that can affect the naphthalene sorption. This suggests the change of solubility of naphthalene and the change of structure of sediment in dissolved organic acids solution both exert effect on naphthalene sorption.

Key words: dissolved organic acid, naphthalene, solubility, sediment, sorption

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