

عنوان مقاله:

Adsorption of surfactant from industrial wastewater by granular activated carbon

محل انتشار:

اولین کنفرانس بین المللی تصفیه فاضلاب و بازیافت آب، فناوری ها و یافته های نو (سال: 1388)

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خلاصه مقاله:

Increasing rate of detergent industry in the world has led to new environmental pollutions. Steel industry use detergents in many processes and units, which it has been caused many problems in wastewater treatment plant and, also it have produced environmental pollutions. In this study, adsorptive removal of an anionic surfactant from wastewater of a steel industry by granular activated carbon has been investigated. Agitation time and adsorbent dose were studied on the batch scale in the laboratory. It was observed that adsorption capacity of surfactant increased with the increasing of activated carbon dose. Also the results indicated that after 30 min as the contact time and 10gr in 100cc of wastewater as adsorbent dose anionic surfactant can be adsorbed more than 88% in the pH about 7 and at 30° c. Also Langmuir Model and Freunlich Model were employed to determine the adsorption isotherm of anionic surfactant. Freunlich isotherm had a better fit to adsorb the anionic surfactant, rather than Langmuir isotherm. Studies on adsorption column proved that breakthrough point of anionic surfactant was around 240xbed volume, which showed that adsorption column had a high ability for removing of anionic surfactant.

کلمات کلیدی:

Adsorption, Anionic Surfactant, Freunlich Isotherm, Granular Activated Carbon, Langmuir Isotherm, Industrial Wastewater

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