

Removal of Sodium Dodecyl Benzene Sulfonate (SDBS) From Radioactive Liquid Wastes by Adsorption of Porous Polymer Resins

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Massive amount of surfactants for separating the radioactive isotopes are included in radioactive liquid wastes (RLWs) which are generated during decontamination or decommissioning. Especially, sodium dodecyl benzene sulfonate (SDBS) is one of the surfactants which are generally used for decontamination or decommissioning as anionic surfactants of late. Discharging such radioactive liquid wastes including many surfactants has a great problem such as high toxicity to humans and animals. For that reason, RLWs contaminated with surfactants should be purified for discharging clean water into ocean and rivers.

The complete elimination of high concentration of SDBS from the RLWs is still undergoing serious hardships, though SDBS with low concentration (1-3 mg/L) from domestic waste water is completely removed by liquid waste treatment plants. SDBS can be efficiently eliminated from wastewaters by adsorption on adsorbents such as activated carbons or polymer resins with high porosity. So we proved that highly porous polymer resins could remove the SDBS effectively with batch system. We used two kinds of porous polymer resins composed with polystyrene or polymethacrylate, respectively, which can be easily synthesized by dispersion polymerization. In the present study, the removal of SDBS was studied by the time, concentration of

SDBS or adsorbents. Finally, removal percentage of SDBS is reached to more than 90% after 100 min by 20 mg/ml of adsorbents.