New Adsorbent containing Copolymer

Polymer Adsorbent with High Adsorption Capacity under High Salt Concentration

Overview

Water pollution is a serious problem on a global scale, and it is required to develop environmentally friendly technologies for the recovery and removal of pollutants with low energy consumption and without the use of large amounts of chemicals. One method of wastewater treatment is to remove pollutants using adsorbents. However, existing adsorbents have a problem that their adsorption capacity is lost due to the Debye shielding effect caused by salts contained in wastewater.

The present invention relates to a novel adsorbent consisting of a copolymer of a monomer containing a cationic or anionic functional group and a monomer containing an aromatic group, which exhibits good adsorption performance even in wastewater with a high salt concentration. By using this adsorbent, it is expected to more efficiently and inexpensively remove chemical substances in industrial wastewater, especially ionic dyes contained in wastewater from textile dyeing factories, ink factories, etc.

Product Application

- ☐ Wastewater treatment agent
- ☐ Adsorbent for ionic dye and coloring material
- ☐ Adsorbent for heavy metal ion and inorganic ion

IP Data

IP No.	:	JP2023-009329
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Features・Outstandings

Radical polymerization

Poly(cation-*adj*-π)
Water soluble

Adsorbent containing Copolymer having approximately alternating Cation and aromatic ring

*Unique know-how in synthesis method

The absorptivity of ionic dye can be maintained at about 60% of that in pure water, which is an ideal state, even in high-salinity water. Conventional ionic polymer coagulants almost lose their absorptivity in high-salinity water.

As the patent has not been disclosed, data disclosure will be handled on an individual basis upon request.

Related Works

*It will be updated from time to time.

[1] H.Fan et al., Nature Communications, 2019, 10, 5127.
[2] H.Fan et al., Science China Chemistry, 2021, 64, 1560.

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