

Improved absorption performance of itaconic acid based superabsorbent hydrogel terpolymer using vinyl sulfonic acid

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We compared absorption characteristics of novel superabsorbent hydrogel (SAH) made up of poly(itaconic acid-co-acrylic acid) and poly(itaconic acid-ter-acrylic acid-ter-vinyl sulfonic acid) which are internally crosslinked with polyethylene glycol diacrylate or 1,6-hexanediol diacrylate and surface-crosslinked with butane diol. Experiments for all absorption characteristics except free absorbency were performed with 0.9 wt% NaCl aqueous solution. In the absorption characteristic of core-SAHI, the centrifuge retention capacity (CRC) increased as the vinyl sulfonic acid (VSA) content increased, which is considered to be due to the strong negative charge by the sulfonic group of the VSA. However, in the case of the absorbency under load (AUL), it showed a tendency to decrease.