

ABSTRACT

The present invention provides a starch-(meth)acrylate graft copolymer and the preparation process thereof. The starch-(meth)acrylate graft copolymer is prepared by copolymerizing (meth)acrylate monomer and starch in a weight ratio of (0.4~8):1, the graft copolymer having a skeleton of large starch molecule is grafted with one or more (meth)acrylate monomer with a grafting ratio of no less than 70%. The present invention further provides an oil swellable material, which comprises the starch-(meth)acrylate graft copolymer above as the swelling agent; and also an oil- and water-swellable material, which comprises the starch-(meth)acrylate graft copolymer above, water absorbing agent, reactive monomer, surfactant and material matrix. Further, sealing articles and packers prepared from the above oil swellable material and oil- and water-swellable material are also provided.