PREPARATION METHOD OF DIATOMACEOUS EARTH AND ZINC OXIDE COMPOSITE HIGH-DENSITY POLYETHYLENE MATERIAL

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Abstract: In order to cope with the increasingly severe environmental problems and energy shortage, the development of green new materials has become an inevitable trend in today's society. In this paper, a preparation method and application of diatomaceous earth and zinc oxide composite high-density polyethylene material are provided, which belong to the solid adsorbent composition material.

Firstly, high-density polyethylene composites were prepared according to a certain proportion of diatomaceous earth and zinc oxide and polyethylene. Then, to improve its performance and UV resistance, Tinuvin 770 is added and mixed with a composite polyethylene material in a gear mixer. Subsequently, the twin-screw extruder is set to a certain temperature and speed, extruded, and the extrusion is cut into microspheres using a tray machine. Finally, these microspheres are injected into the injection molding machine, where the target mold is selected and molded. At the same time, it can be used as a food packaging bag material, which can inhibit the growth of Staphylococcus aureus and E. coli, so that it has the minimum UV stabilizer content, which is a cost-effective and high-performance choice, and its ability to block ultraviolet rays is strong, and it can well protect the quality of packaged food.

Keywords: diatomaceous, zinc oxide, high-density polyethylene, Tinuvin 770