

Modified flexible polypropylene insulating material and preparation method and use thereof

Abstract

The invention belongs to the field of insulating materials, in particular cable insulating materials, and particularly relates to a modified flexible polypropylene insulating material, and preparation method and use thereof. The modified flexible polypropylene insulating material comprises a propylene-based continuous phase, and a rubber phase and a grafted phase derived from an unsaturated bond-containing polymerizable monomer dispersed in the propylene-based continuous phase; wherein, the modified flexible polypropylene insulating material has a content of xylene solubles of 10-55 wt%, preferably 15-45 wt%, more preferably 18-40 wt%, and still more preferably 20-40 wt%, based on the total weight of the modified flexible polypropylene insulating material; the content of structural units derived from the unsaturated bond-containing polymerizable monomer and in a grafted state in the modified flexible polypropylene insulating material is 0.3-6 wt%, and preferably 0.7-5 wt%; the flexural modulus of the modified flexible polypropylene insulating material is 200-1000 MPa, preferably 200-950 MPa, more preferably 200-700 MPa, and still more preferably 250-600 MPa; preferably, the ratio of the mass of the structural units derived from the unsaturated bond-containing polymerizable monomer in xylene insolubles to the mass of the structural units derived from the unsaturated bond-containing polymerizable monomer in the modified flexible polypropylene insulating material is more than 0.1, preferably 0.3-0.9. The modified flexible polypropylene insulating material of the invention can give consideration to both mechanical property and electrical property at a higher working temperature, and is suitable for working conditions of high temperature and high operating field strength.

<Fig. 1>